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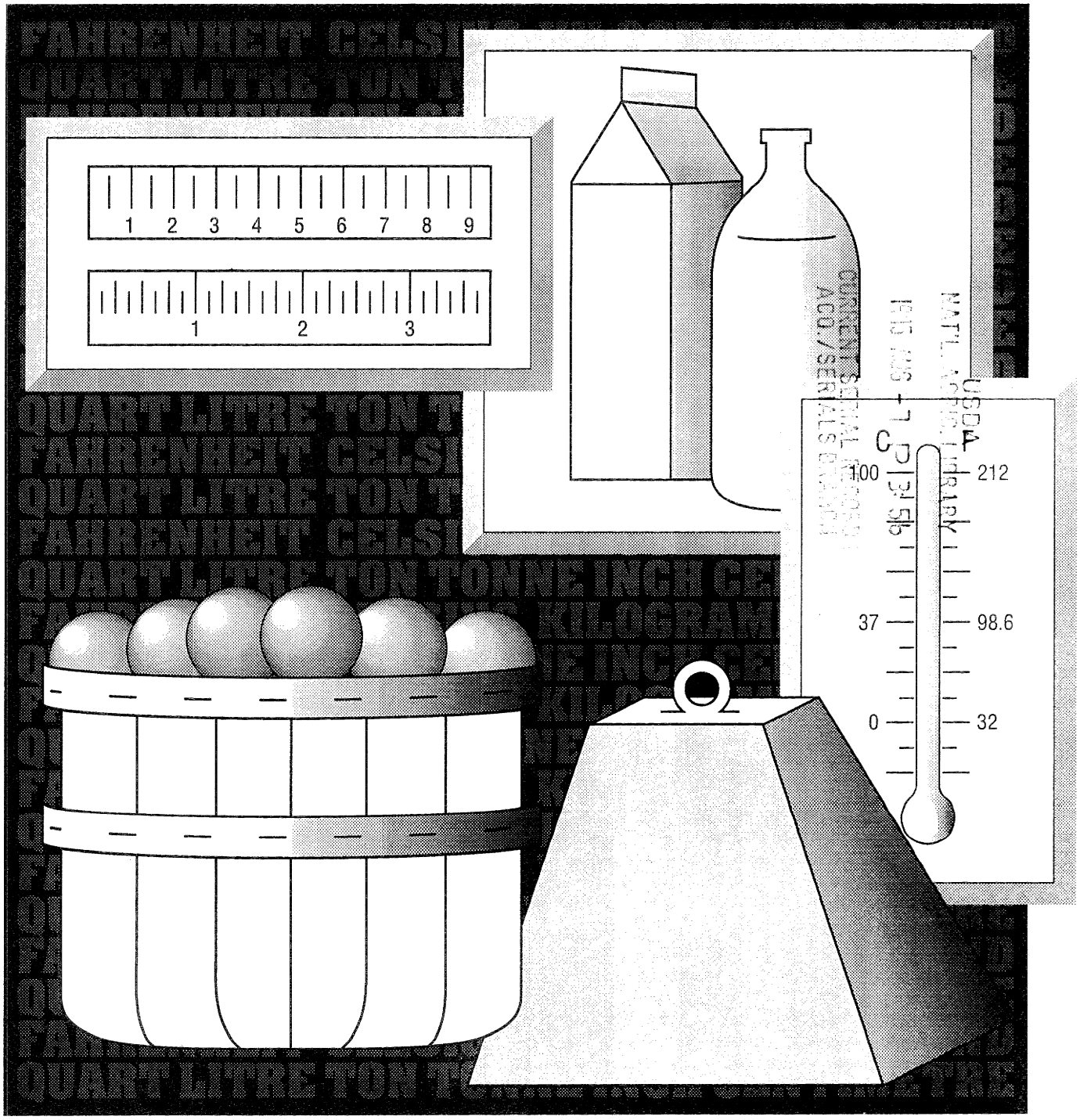
Weights, Measures, and Conversion Factors for Agricultural Commodities and Their Products



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Weights, Measures, and Conversion Factors for Agricultural Commodities and Their Products. Economic Research Service in cooperation with the Agricultural Marketing Service, the Agricultural Research Service, and the National Agricultural Statistics Service, U.S. Department of Agriculture. Agricultural Handbook No. 697.

Abstract

This handbook is a compilation of weights, measures, and conversion factors used for agricultural commodities and their products. Several of the conversion factors and values shown in this handbook can be applied to many commodities. Some factors and values relate to specific commodities or products. This handbook supersedes Statistical Bulletin No. 616, *Conversion Factors and Weights and Measures for Agricultural Commodities and Their Products* (1979). When feasible, general purpose tables were updated to reflect changes in agricultural production and marketing. Considerable emphasis was given to metric measures.

Keywords: Weights, measures, conversion factors, U.S. measures, metric measures.

Supersedes SB-616, *Conversion Factors and Weights and Measures for Agricultural Commodities and Their Products*, 1979.

Washington, DC 20005-4788 June 1992

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Weights, Measures, and Conversion Factors for Agricultural Commodities and Their Products

This handbook was compiled to provide conversion factors for use in statistical, research, and service programs of the U.S. Department of Agriculture (USDA). The handbook supersedes Statistical Bulletin No. 616, *Conversion Factors and Weights and Measures for Agricultural Commodities and Their Products*, published in 1979. Revisions often reflect changes in agricultural production and marketing practices. Also, much more emphasis has been given to metric weights and measures and to factors for converting from U.S. measures to metric measures.

Values shown are generally intended to represent overall averages, except where indicated. The conversion factors included are based on available information for current conditions and practices. While it includes a reasonably complete set of general purpose factors, the handbook may be less than fully satisfactory for some particular commodities or needs. Conversion factors for many commodities can change from year to year. Thus, caution is suggested in using the handbook for compiling or revising historical series.

Accounting for changes in marketing and production practices can require considerable study and consultation. Thus, it has not been possible to update all tables. A few tables published in Statistical Bulletin No. 616 that were felt to be seriously out of date or of limited relevance at this time have been deleted. Information needs noted in preparing this handbook may stimulate research that can lead to future enhancements. Users of the handbook are invited to suggest alternative sources of information or supply materials for improvements.

Much of the handbook revision was prepared by Economic Research Service (ERS) staff, especially by commodity specialists from the Commodity Economics Division (CED). Analysts from the Agriculture and Rural Economy Division (ARED), the Agriculture and Trade Analysis Division (ATAD), and the Resources and Technology Division (RTD) provided materials and helped with review. Staff of the Agricultural Research Service (ARS), the Agricultural Marketing Service (AMS), and the National Agricultural Statistics Service (NASS) helped prepare and reviewed the tables.

Individuals from the CED who coordinated the preparation of materials were James Cole, Crops Branch; Kenneth Nelson, Livestock, Dairy, and Poultry Branch; William Moore, Specialty Agriculture Branch; and Carolyn Whitton, Commodity and Trade Analysis Branch. Representing other ERS divisions were Mir Ali, ARED; William Crosswhite, RTD; and C. Edward Overton, ATAD. Other USDA agency representatives were Alfonzo Drain, NASS; Gary Scavongelli, AMS; and Wilda Martinez, ARS.

Edward Reinsel and James Horsfield, Office of the Administrator, ERS, served as overall coordinators for the handbook. Joseph Lockley provided typing support and Bonnie Moore prepared the camera copy.

Table 2—Customary weights and measures of the United States

Linear measure

12 inches (in)	= 1 foot (ft)	
3 feet	= 1 yard (yd)	
16½ feet	= 1 rod (rd), pole, or perch	
40 rods	= 1 furlong (fur)	= 660 feet
	= 10 chains	= 201.168 meters
8 furlongs	= 1 U.S. statute mile (mi)	= 5,280 feet
1 852 meters	= 6,076.11549 feet (approximately)	= 1 international nautical mile

Area measure

144 square inches (in^2)	= 1 square foot (ft^2)	
9 square feet	= 1 square yard (yd^2)	
	= 1,296 square inches	
272¼ square feet	= 1 square rod (sq rd)	
160 square rods	= 1 acre	= 43,560 square feet
640 acres	= 1 square mile (mi^2)	
1 mile square	= 1 section of land	
6 miles square	= 1 township	
	= 36 sections	= 36 square miles

Cubic measure

1,728 cubic inches (in^3)	= 1 cubic foot (ft^3)	
27 cubic feet	= 1 cubic yard (yd^3)	

Gunter's or surveyor's chain measure

0.66 foot (ft)	= 1 link (li)	
100 links	= 1 chain (ch)	= 20.116 8 meters
	= 4 rods	= 66 feet
8 000 links	= 1 U.S. statute mile (mi)	
1 rod	= 25 links	
80 chains	= 1 U.S. statute mile (mi)	
	= 320 rods	= 5,280 feet

Liquid measure

4 gills (gi)	= 1 pint (pt)	= 28.875 cubic inches
2 pints	= 1 quart (qt)	= 57.75 cubic inches
4 quarts	= 1 gallon (gal)	= 231 cubic inches

Dry measure

2 pints (pt)	= 1 quart (qt)	= 67.2006 cubic inches
8 quarts	= 1 peck (pk)	= 537.605 cubic inches
	= 16 pints	
4 pecks	= 1 bushel (bu)	= 2,150.42 cubic inches
	= 32 quarts	

Continued—

Table 2—Customary weights and measures of the United States—Continued

Avoirdupois weight		
27-11/32 grains	= 1 dram (dr)	
16 drams	= 1 ounce (oz)	
	= 437½ grains	
16 ounces	= 1 pound (lb)	= 256 drams
	= 7,000 grains	
100 pounds	= 1 hundredweight (cwt)	
20 hundredweights	= 1 ton	= 2,000 pounds
Values in gross or long measure		
112 pounds	= 1 gross or long hundredweight	
20 gross or long hundredweights	= 1 gross or long ton	
	= 2,240 pounds	

Table 3—Conversion of weights and measures

Units of length—International measure

Unit		*Inches*	*Feet*	*Yards*	*Centimeters*	*Meters*
1 inch	=	1	0.08333333	0.02777778	2.54	0.025 4
1 foot	=	12	1	0.3333333	30.48	0.304 8
1 yard	=	36	3	1	91.44	0.914 4
1 mile	=	63,360	5,280	1,760	160 934.4	1 609.344
1 centimeter	=	0.3937008	0.03280840	0.01093613	1	0.01
1 meter	=	39.37008	3.280840	1.093613	100	1

Length—Survey measure

Unit		*Feet*	*Rods*	*Chains*	*Miles*	*Meters*
1 link	=	0.66	0.04	0.01	0.000125	0.201 168 4
1 foot	=	1	0.06060606	0.01515152	0.0001893939	0.304 800 6
1 rod	=	16.5	1	0.25	0.003125	5.029 210
1 chain	=	66	4	1	0.0125	20.116 84
1 mile	=	5,280	320	80	1	1 609.347
1 meter	=	3.280833	0.1988384	0.0497096	0.0006213699	1

Area—International measure

Unit		*Square inches*	*Square feet*	*Square yards*
1 square inch	=	1	0.006944444	0.0007716049
1 square foot	=	144	1	0.1111111
1 square yard	=	1,296	9	1
1 square centimeter	=	0.1550003	0.001076391	0.000119599
1 square meter	=	1 550.003	10.76391	1.195990

Unit		*Square centimeters*	*Square meters*
1 square inch	=	6.451 6	0.000 645 16
1 square foot	=	929.030 4	0.092 903 04
1 square yard	=	8 361.273 6	0.836 127 36
1 square centimeter	=	1	0.000 1
1 square meter	=	10 000	1

Units of area—Survey measure

Unit		*Square feet*	*Square rods*	*Square chains*	*Acres*
1 square foot	=	1	0.003673095	0.0002295684	0.00002295684
1 square rod	=	272.25	1	0.0625	0.00625
1 square chain	=	4,356	16	1	0.1
1 acre	=	43,560	160	10	1
1 square mile	=	27,878,400	102,400	6,400	640
1 square meter	=	10.763 87	0.03953670	0.002471044	0.0002471044
1 hectare	=	107,638.7	395.3670	24.71044	2.471044

Continued—

Table 3—Conversion of weights and measures—Continued

Unit		*Square miles*	*Square meters*	*Hectares*
1 square rod	=	0.000009765625	25.292 95	0.002 529 295
1 square chain	=	0.00015625	404.687 3	0.040 468 73
1 acre	=	0.0015625	4 046.873	0.404 687 3
1 square mile	=	1	2 589 998	258.999 8
1 square meter	=	0.0000003861006	1	0.000 1
1 hectare	=	0.003861006	100 000	1

Volume

Unit		*Cubic inches*	*Cubic feet*	*Cubic yards*
1 cubic inch	=	1	0.0005787037	0.00002143347
1 cubic foot	=	1,728	1	0.03703704
1 cubic yard	=	46,656	27	1
1 cubic centimeter	=	0.06102374	0.00003531467	0.000001307951
1 cubic decimeter	=	61.02374	0.03531467	0.001307951
1 cubic meter	=	61,023.74	35.314 67	1.307951

Unit		*Milliliters*	*Liters*	*Cubic meters*
1 cubic inch	=	16.387 064	0.016 387 064	0.000 016 387 064
1 cubic foot	=	28 316.846 592	28.316 846 592	0.028 316 846 592
1 cubic yard	=	764 554.857 984	764.554 857 984	0.764 554 857 984
1 cubic centimeter	=	1	0.001	0.000 001
1 cubic decimeter	=	1 000	1	0.001
1 cubic meter	=	1 000 000	1 000	1

Capacity—Dry measure

Unit		*Dry pints*	*Dry quarts*	*Pecks*	*Bushels*
1 dry pint	=	1	0.5	0.0625	0.015625
1 dry quart	=	2	1	0.125	0.03125
1 peck	=	16	8	1	0.25
1 bushel	=	64	32	4	1
1 cubic inch	=	0.0297616	0.0148808	0.00186010	0.000465025
1 cubic foot	=	51.42809	25.71405	3.214256	0.80356395
1 liter	=	1.816166	0.9080830	0.1135104	0.02837759
1 cubic meter	=	1,816.166	908.0830	113.5104	28.37759

Unit		*Cubic inches*	*Cubic feet*	*Liters*	*Cubic meters*
1 dry pint	=	33.6003125	0.01944463	0.550 610 5	0.000 550 610 5
1 dry quart	=	67.200625	0.03888925	1.101 221	0.001 101 221
1 peck	=	537.605	0.311114	8.809 768	0.008 809 768
1 bushel	=	2,150.42	1.244456	35.239 07	0.035 239 07
1 cubic inch	=	1	0.0005787037	0.016 387 06	0.000 016 387 06
1 cubic foot	=	1,728	1	28.316 85	0.028 316 85
1 liter	=	61.02374	0.03531467	1	0.001
1 cubic meter	=	61,023.74	35.31467	1 000	1

Continued—

Table 3—Conversion of weights and measures—Continued

Capacity—Liquid measure

Unit		*Fluid ounces*	*Liquid pints*	*Liguid quarts*	*Gallons*
1 fluid ounce	=	1	0.0625	0.03125	0.0078125
1 liquid pint	=	16	1	0.5	0.125
1 liquid quart	=	32	2	1	0.25
1 gallon	=	128	8	4	1
1 cubic inch	=	0.5541126	0.03463203	0.01731602	0.004329004
1 cubic foot	=	957.5065	59.84416	29.92208	7.480519
1 milliliter	=	0.03381402	0.002113376	0.001056688	0.0002641721
1 liter	=	33.81402	2.113376	1.056688	0.2641721

Unit		*Cubic inches*	*Cubic feet*	*Milliliters*	*Liters*
1 fluid ounce	=	1.8046875	0.001044379	29.573 53	0.029 573 53
1 liquid pint	=	28.875	0.01671007	473.176 5	0.473 176 5
1 liquid quart	=	57.75	0.03342014	946.352 9	0.946 352 9
1 gallon	=	231	0.1336806	3 785.412	3.785 412
1 cubic inch	=	1	0.0005787037	16.387 06	0.016 387 06
1 cubic foot	=	1,728	1	28 316.85	28.316 85
1 milliliter	=	0.06102374	0.00003531467	1	0.001
1 liter	=	61.02374	0.03531467	1 000	1

Mass not less than avoirdupois ounces

Unit		*Avoirdupois ounces*	*Avoirdupois pounds*	*Short hundred-weights*	*Short tons*
1 avoirdupois ounce	=	1	0.0625	0.000625	0.00003125
1 avoirdupois pound	=	16	1	0.01	0.0005
1 short hundredweight	=	1,600	100	1	0.05
1 short ton	=	32,000	2,000	20	1
1 long ton	=	35,840	2,240	22.4	1.12
1 kilogram	=	35.27396	2.204623	0.02204623	0.001102311
1 metric ton	=	35,273.96	2,204.623	22.04623	1.102311

Unit		*Long tons*	*Kilograms*	*Metric tons*
1 avoirdupois pound	=	0.0004464286	0.453 592 37	0.000 453 592 37
1 short hundredweight	=	0.04464286	45.359 237	0.045 359 237
1 short ton	=	0.8928571	907.184 74	0.907 184 74
1 long ton	=	1	1 016.046 908 8	1.016 046 908 8
1 kilogram	=	0.0009842065	1	0.001
1 metric ton	=	0.9842065	1 000	1

Unit		*Avoirdupois pounds*	*Milligrams*	*Grams*
1 avoirdupois ounce	=	0.0625	28 349.523 125	28.349 523 125
1 avoirdupois pound	=	1	453 592.37	453.592 37
1 milligram	=	0.000002204623	1	0.001
1 gram	=	0.002204623	1 000	1
1 kilogram	=	2.204623	1 000 000	1 000

Table 4—Other metric and U.S. equivalents

Lengths		
1 decimeter (dm)	=	3.937 inches
1 dekameter (dam)	=	32.808 feet
1 fathom	=	6 feet
	=	1.828 8 meters
1 hand	=	4 inches
1 kilometer (km)	=	0.621 mile
1 mile (mi) (international nautical)	=	1.852 kilometers
		1.151 survey miles
1 millimeter (mm)	=	0.03937 inch
1 international foot	=	0.999998 survey foot
1 international mile	=	0.999998 mile
Areas or surfaces		
1 square survey foot	=	1.000004 square international feet
1 square survey mile	=	1.000004 square international miles
1 square (building)	=	100 square feet
1 square decimeter (dm^2)	=	15.500 square inches
1 square kilometer (km^2)	=	247.104 acres
	=	0.386 square mile
1 square millimeter (mm^2)	=	0.002 square inch
Capacities or volumes		
1 barrel (bbl), liquid	=	31 to 42 gallons[1]
1 barrel (bbl), standard for fruits, vegetables, and other dry commodities, except cranberries	=	7,056 cubic inches
	=	105 dry quarts
	=	3.281 bushels, struck measure
1 barrel (bbl), standard, cranberry	=	5,826 cubic inches
	=	86 45/64 dry quarts
	=	2.709 bushels, struck measure
1 cord (cd) (firewood)	=	128 cubic feet
Water flow relationships (approximations)		
1 billion gallons per day (bgd)	=	1,121 thousand acre-feet per year
	=	1,547 cubic feet per second
	=	694.4 thousand gallons per minute
	=	3.785 million cubic meters per day
1 thousand acre-feet per year	=	0.8921 million gallons per day (mgd)
	=	1.380 cubic feet per second
	=	0.6195 thousand gallons per minute
	=	3.377 thousand cubic meters per day
1 million cubic meters per day	=	264.2 million gallons per day
1 thousand cubic meters per day	=	296.12 acre-feet per year

[1]There are a variety of "barrels" established by law or usage. For example, Federal taxes on fermented liquors are based on a barrel of 31 gallons; many State laws fix the "barrel for liquids" as 31½ gallons; one State fixes a 36-gallon barrel for cistern measurement; Federal law recognizes a 40-gallon barrel for "proof of spirits"; by custom, 42 gallons comprise a barrel of crude oil or petroleum products for statistical purposes, and this equivalent is recognized "for liquids" by four States.

Table 5—Factors for converting domestic and metric weights and measures commonly used for agricultural commodities

Domestic weight		Equivalent	Metric weight		Equivalent
1 ounce	=	28.349 5 grams	1 gram	=	0.035274 ounce
1 pound	=	453.592 4 grams	1 gram	=	0.0022046 pound
1 pound	=	0.455 924 kilogram	1 kilogram	=	2.204622 pounds
1 pound	=	0.004 535 9 metric quintal	1 metric quintal	=	220.4622 pounds
1 pound	=	0.0005 short ton	1 short ton	=	2,000 pounds
1 pound	=	0.000 453 6 metric ton	1 metric ton	=	2,204.622 pounds
1 pound	=	0.0004464 long ton	1 long ton	=	2,240 pounds
1 short ton	=	0.907 185 metric ton	1 metric ton	=	1.102311 short tons
1 long ton	=	1.016 047 metric tons	1 metric ton	=	0.984206 long ton
1 short ton	=	0.892857 long ton	1 long ton	=	1.12 short tons
1 million pounds	=	500 short tons	1 short ton	=	0.002 million pounds
1 million pounds	=	453.592 5 metric tons	1 metric ton	=	0.0022046 million pounds
1 million pounds	=	446.4286 long tons	1 long ton	=	0.00224 million pounds
60-pound bushel of wheat, white potatoes, and soybeans					
1 bushel	=	0.03 short ton	1 short ton	=	33.333 bushels
1 bushel	=	0.027 215 5 metric ton	1 metric ton	=	36.7437 bushels
1 bushel	=	0.0267857 long ton	1 long ton	=	37.333 bushels
1 bushel	=	0.272 155 metric quintal	1 metric quintal	=	3.67437 bushels
1 bushel	=	27.215 5 kilograms	1 kilogram	=	0.036744 bushel
56-pound bushel of shelled corn, rye, sorghum grain, and flaxseed					
1 bushel	=	0.028 short ton	1 short ton	=	35.714 bushels
1 bushel	=	0.025 4 metric ton	1 metric ton	=	39.368 bushels
1 bushel	=	0.025 long ton	1 long ton	=	40 bushels
48-pound bushel of barley, buckwheat, and apples					
1 bushel	=	0.024 short ton	1 short ton	=	41.667 bushels
1 bushel	=	0.021 772 metric ton	1 metric ton	=	45.9296 bushels
1 bushel	=	0.021429 long ton	1 long ton	=	46.667 bushels
32-pound bushel of oats					
1 bushel	=	0.016 short ton	1 short ton	=	62.5 bushels
1 bushel	=	0.014 515 metric ton	1 metric ton	=	68.8944 bushels
1 bushel	=	0.014286 long ton	1 long ton	=	70 bushels
38-pound bushel of oats					
1 bushel	=	0.019 short ton	1 short ton	=	52.63 bushels
1 bushel	=	0.017 24 metric ton	1 metric ton	=	58.016 bushels
1 bushel	=	0.01696 long ton	1 long ton	=	58.94 bushels

Table 6—Individual commodity weights and measures

Commodity	Unit	Approximate net weight	
		Metric	United States
		Kilograms	*Pounds*
Alfalfa seed	Bushel	27.2	60
Apples	Bushel basket or carton	18.1	40
	Carton, tray or cell pack	18.1	40
Apricots	Lug, loose	10.9	24
Western	4-basket crate	11.8	26
Artichokes	Carton	10.4	23
Globe	½-box	9.1	20
Jerusalem	Bushel	22.7	50
Asparagus	Crate	13.6	30
Avocados	Lug	5.4-6.8	12-15
	Flat or carton, 2 layer	11.8	26
Bananas	Carton	18.1	40
Barley	Bushel	21.8	48
Beans:			
Lima, dry	Bushel	25.4	56
Other, dry	Bushel	27.2	60
	Sack	45.4	100
Lima, unshelled	Bushel	12.7-14.5	28-32
Snap	Bushel	12.7-14.5	28-32
Beets:			
Topped	Sack	11.3	25
Bunched	Crate or carton	17.2	38
Berries frozen pack:			
Without sugar	50-gallon barrel	172	380
3 + 1 pack	50-gallon barrel	193	425
2 + 1 pack	50-gallon barrel	204	450
Blackberries	12, ½-pint baskets	2.7	6
Bluegrass seed	Bushel	6.4-13.6	14-30
Broccoli	Carton	10.4	23
Broomcorn (6 bales per ton)	Bale	151	333
Broomcorn seed	Bushel	20.0-22.7	44-50
Brussels sprouts	Carton	11.3	25
Buckwheat	Bushel	21.8	48
Butter	Box	30.9	68
Cabbage	Open mesh bag, sack	22.7	50
	Wirebound crate	22.7	50
	Western crate	36.3	80
Chinese cabbage	15½-inch wirebound crate	22.7-24.0	50-53
	1-1/9-bushel wirebound crate	18.1-20.4	40-45
Cantaloupes	½ carton or crate	18.1	40
Carrots, without tops	Sacks, 48 1-pound and 24 2-pound	21.8	48
	Sacks	22.7	50

Continued—

Table 6—Individual commodity weights and measures—Continued

Commodity	Unit	Approximate net weight	
		Metric	United States
		Kilograms	*Pounds*
Castor beans	Bushel	18.6	41
Castor oil	Gallon	3.6	8
	Western Grower's Association crate	22.7-27.2	50-60
Cauliflower	Carton, filmwrapped trimmed	11.3	25
	LI wirebound crate	27.2	60
Celery	Carton or crate	27.2	60
Cherries	Lug, California	8.2	18
	Lug, Northwest	9.1	20
Chives	Flat of 12 pots	4.5	10
Clover seed	Bushel	27.2	60
Coffee	Bag	60	132.3
Corn:			
Ear, husked	Bushel	31.8	70
Shelled	Bushel	25.4	56
Meal	Bushel	22.7	50
Oil	Gallon	3.5	7.7
Syrup	Gallon	5.3	11.72
Sweet	Carton	22.7	50
	Wirebound crate	19.1	42
Cotton	Bale, gross	227	500
	Bale, net	218	480
Cottonseed	Bushel	14.5	32
Cottonseed oil	Gallon	3.5	7.7
Cowpeas	Bushel	27.2	60
Cranberries	Barrel	45.4	100
	Carton, 24 12-ounce filmbags	8.2	18
Cream, 40-percent butterfat	Gallon	3.80	8.38
Cucumbers	1-1/9-bushel, carton/crate	24.9	55
Dewberries	Flat, 12 ½-pint baskets	2.7	6
Eggplant	1-1/9-bushel, carton/crate	15.0	33
Eggs, average size	Case, 30 dozen	21.3	47.0
Escarole	1-1/9-bushel, carton/crate	11.3	25
Figs, fresh	Flat 1 layer tray pack	2.7	6
Flaxseed	Bushel	25.4	56
Flour, various	Bag	45.4	100
Garlic	Carton or crate, bulk	13.6	30
	Carton of 12-tube or 12-film bag package (2 cloves each)	4.5	10

Continued—

Table 6—Individual commodity weights and measures—Continued

Commodity	Unit	Approximate net weight	
		Metric	United States
		Kilograms	*Pounds*
Grapefruit:			
Florida and Texas	½-box mesh bag	18.1	40
Florida	4/5-bushel carton	18.1	40
Texas	7/10-bushel carton	18.1	40
California and Arizona	Carton	15.4	34
Grapes	Carton or lug	10.0-10.4	22-23
Eastern	12-quart basket	9.1	20
Western	Lug	12.7	28
	4-basket crate	9.1	20
Hempseed	Bushel	20.0	44
Hickory nuts	Bushel	22.7	50
Honey	Gallon	5.4	11.84
Honeydew melons	⅔ carton	13.6	30
Hops	Bale, gross	90.7	200
Horseradish roots	Sack	22.7	50
Hungarian millet seed	Bushel	21.8-22.7	48-50
Kale	Carton or crate	11.3	25
Kapok seed	Bushel	15.9-18.1	35-40
Kiwifruit:			
California	1-layer flat	1.8-2.7	4-6
New Zealand	1-layer carton	3.2-4.1	7-9
Leeks	4/5-bushel crate	9.1	20
Lemons:			
Florida	4/5-bushel carton	19.1	42
California and Arizona	Carton	17.2	38
Lentils	Bushel	27.2	60
Lettuce	Carton	22.7	50
Lettuce, hothouse	24-quart basket	4.5	10
Limes	Carton	17.2	38
Linseed oil	Gallon	3.5	7.7
Malt	Bushel	15.4	34
Mangoes:			
Florida	Flat	6.4	14
Mexico	Lug	4.5-5.0	10-11
Maple syrup	Gallon	5.00	11.02
Meadow fescue seed	Bushel	10.9	24
Milk	Gallon	3.90	8.62
Millet	Bushel	21.8-22.7	48-60
Molasses, edible	Gallon	5.3	11.74
Molasses, inedible	Gallon	5.3	11.74

Continued—

Table 6—Individual commodity weights and measures—Continued

Commodity	Unit	Approximate net weight	
		Metric	United States
		Kilograms	*Pounds*
Mustard seed	Bushel	26.3-27.2	58-60
Nectarines	Los Angeles lug, 2-layer tray pack	10.0	22
	Lug or carton, tight-fill	11.3	25
Oats	Bushel	14.5	32
Okra	Bushel hamper or crate	13.6	30
	5/9-bushel crate	8.2	18
	Carton	8.2	18
	12-quart basket, crate, or carton	6.8-8.2	15-18
Olives	Lug	11.3-13.6	25-30
Olive oil	Gallon	3.5	7.6
Onions, dry	Sack	22.7	50
Onions, green bunched	Carton	5.9	13
Onion sets	Bushel	12.7-14.5	28-32
Oranges:			
Florida	4/5-bushel carton	19.5	43
Texas	7/10-bushel carton	19.1	42
California and Arizona	Carton	17.2	38
Orchardgrass seed	Bushel	6.4	14
Palm oil	Gallon	3.5	7.7
Papayas	Carton	4.5	10
Parsley	Carton, bushel basket, or crate 5-dozen bunches	9.1-11.3	20-25
Parsnips	Bushel	22.7	50
Peaches	¾-bushel, carton/crate	17.2	38
	2-layer carton or lug	10	22
Peanut oil	Gallon	3.5	7.7
Peanuts, unshelled:			
Virginia type	Bushel	7.7	17
Runners, southeastern	Bushel	9.5	21
Spanish—			
Southeastern	Bushel	11.3	25
Southwestern	Bushel	11.3	25
Pears:			
California	Carton	16.3	36
	4/5-bushel carton	20.9	46
Northwest	4/5-bushel carton	20.4	45
Peas, green:			
Unshelled	Bushel	12.7-13.6	28-30
Dry	Bushel	27.2	60

Continued—

Table 6—Individual commodity weights and measures—Continued

Commodity	Unit	Approximate net weight	
		Metric	United States
		Kilograms	*Pounds*
Peppers, green	Bushel, 1-1/9-bushel carton/crate	12.7	28
Perilla seed	Bushel	16.8-18.1	37-40
Persimmons	2-layer tray pack, lug or carton	9.1-11.3	20-25
	1-layer tray pack, flat or carton	4.5-5.4	10-12
Pineapples	Carton	18.1	40
Plantains	Carton	22.7	50
Plums	½-bushel carton	12.7	28
Prunes	½-bushel carton	13.6	30
Pomegranates	2-layer carton or lug	10.0-11.8	22-26
Popcorn:			
On ear	Bushel	31.8	70
Shelled	Bushel	25.4	56
Poppy seed	Bushel	20.9	46
Potatoes	Carton	45.4	100
	Sack	45.4	100
Prickly pears	Box, wrapped pack	8.2	18
Quinces	Carton/lug 2 layer	10.0	22
Radishes, topped	Carton of 24, 8-ounce film bags	5.4	12
	Carton of 30, 6-ounce film bags	5.0-5.4	11-12
	40-pound film bag	18.1	40
Rapeseed	Bushel	22.7-27.2	50-60
Raspberries	Flat 12 ½-pint baskets	2.7	6
Redtop seed	Bushel	22.7-27.2	50-60
Refiners' syrup	Gallon	5.2	11.45
Rice:			
Rough	Bushel	20.4	45
	Bag	45.4	100
	Barrel	73.5	162
Milled	Pocket or bag	45.4	100
Rosin	Drum, net	236	520
Rhubarb	Carton or lug	9.1	20
	5-pound carton	2.3	5
Rutabagas	Sack	22.7	50
Rye	Bushel	25.4	56
Savory	Sack, crate, or carton	16.8	37
Sesame seed	Bushel	20.9	46
Shallots	Sacks of 8, 5-pound bags	18.1	40
Sorgo:			
Seed	Bushel	22.7	50
Syrup	Gallon	5.2	11.55
Sorghum grain	Bushel	25.4	56

Continued—

Table 6—Individual commodity weights and measures—Continued

Commodity	Unit	Approximate net weight	
		Metric	United States
		Kilograms	*Pounds*
Soybeans	Bushel	27.2	60
Soybean oil	Gallon	3.5	7.7
Spelt	Bushel	18.1	40
Spinach	Bushel	11.3	25
Strawberries	12, 1-pint	5.4	12
Sudangrass seed	Bushel	18.1	40
Sugarcane:			
Syrup (sulfured or unsulfured)	Gallon	5.2	11.45
Sunflower seed	Bushel	10.9-14.5	24-32
Sweetpotatoes	Carton	18.1	40
Tangerines:			
California and Arizona	Carton	11.3	25
Florida	4/5-bushel carton/crate	19.5	43
Timothy seed	Bushel	20.4	45
Tobacco:			
Maryland	Hogshead	352	775
Flue-cured	Hogshead	431	950
Burley	Hogshead	442	975
Dark air-cured	Hogshead	522	1,150
Virginia fire-cured	Hogshead	612	1,350
Kentucky and Tennessee fire-cured	Hogshead	680	1,500
Cigar-leaf	Case	113-166	250-365
	Bale	68.0-79.4	150-175
	Crate	27.2	60
Tomatoes	Carton	11.3	25
	2-layer flat	9.1	20
Tomatoes, hothouse	12-quart basket	9.1	20
Tung oil	Gallon	3.5	7.8
Turnips:			
Without tops	Sack	11.3	25
Bunched	Carton	17.2	38
Turpentine	Gallon	3.3	7.23
Velvetbeans (hulled)	Bushel	27.2	60
Vetch	Bushel	27.2	60
Walnuts	Sacks	22.7	50
Watermelon	Carton	38.6	85
	Bin	476.3	1,050
Watercress	Carton, 25 bunches	3.6	8
Wheat	Bushel	27.2	60

Continued—

Table 6—Individual commodity weights and measures—Continued

Note: Much of this table on individual commodity weights and measures was taken from *Agricultural Statistics, 1990,* prepared by USDA's National Agricultural Statistics Service, Agricultural Statistics Board. Some of the weights were suggested by the Agricultural Marketing Service, U.S. Department of Agriculture. The table covers many important agricultural products, but it does not cover all farm products or all containers for any one product.

The information was assembled from State schedules of legal weights, various sources within the U.S. Department of Agriculture, and materials from other Government agencies. For most products, especially fruits and vegetables, there is considerable variation in weight per unit of volume because of differences in variety, size, condition and tightness of pack, degree to which the container is heaped, and other factors. An effort was made to select representative averages for listed products. For commodities for which there is considerable shrinkage, the point of origin weight or weight at harvest was used.

The approximate or average weights given in this table do not necessarily have official standing as a basis for packing or as grounds for settling disputes. Nor are they all recognized as legal weights.

Considerable information is available on dimensions of the various units and containers listed in *Agricultural Statistics.*

Table 7—Factors used to convert pounds of carcass weight to retail and trimmed, boneless equivalent weights for red meats, 1970 to 1991[1]

Year	Beef		Pork[2]		Veal		Lamb and mutton	
	Retail	Boneless	Retail	Boneless	Retail	Boneless	Retail	Boneless
				Kilograms				
1970	0.337	0.318	0.349	0.303	0.378	0.312	0.406	0.300
1971	.337	.318	.349	.305	.378	.312	.406	.300
1972	.337	.318	.350	.308	.378	.312	.406	.300
1973	.337	.318	.350	.310	.378	.312	.406	.300
1974	.337	.318	.351	.312	.378	.312	.406	.300
1975	.337	.318	.351	.315	.378	.312	.406	.300
1976	.337	.318	.352	.317	.378	.312	.406	.300
1977	.337	.318	.352	.319	.378	.312	.406	.300
1978	.337	.318	.352	.321	.378	.312	.406	.300
1979	.337	.318	.353	.322	.378	.312	.406	.300
1980	.337	.318	.353	.324	.378	.312	.406	.300
1981	.337	.318	.354	.326	.378	.312	.406	.300
1982	.337	.318	.354	.327	.378	.312	.406	.300
1983	.337	.318	.355	.328	.378	.312	.406	.300
1984	.337	.318	.355	.329	.378	.312	.406	.300
1985	.337	.318	.356	.330	.378	.312	.406	.300
1986	.333	.315	.355	.331	.378	.312	.406	.300
1987	.324	.305	.355	.331	.378	.312	.406	.300
1988	.321	.304	.354	.332	.378	.312	.406	.300
1989	.321	.304	.354	.332	.378	.312	.406	.300
1990[2]	.321	.304	.354	.332	.378	.312	.406	.300
1991[3]	.321	.304	.354	.332	.378	.312	.406	.300
				Pounds				
1970	.740	.698	.765	.665	.830	.685	.890	.658
1971	.740	.698	.766	.670	.830	.685	.890	.658
1972	.740	.698	.767	.675	.830	.685	.890	.658
1973	.740	.698	.768	.680	.830	.685	.890	.658
1974	.740	.698	.769	.685	.830	.685	.890	.658
1975	.740	.698	.770	.690	.830	.685	.890	.658
1976	.740	.698	.771	.695	.830	.685	.890	.658
1977	.740	.698	.772	.699	.830	.685	.890	.658
1978	.740	.698	.773	.703	.830	.685	.890	.658
1979	.740	.698	.774	.707	.830	.685	.890	.658
1980	.740	.698	.775	.711	.830	.685	.890	.658
1981	.740	.698	.776	.715	.830	.685	.890	.658
1982	.740	.698	.777	.717	.830	.685	.890	.658
1983	.740	.698	.778	.719	.830	.685	.890	.658
1984	.740	.698	.779	.721	.830	.685	.890	.658
1985	.740	.698	.780	.723	.830	.685	.890	.658
1986	.730	.690	.779	.725	.830	.685	.890	.658
1987	.710	.670	.778	.727	.830	.685	.890	.658
1988	.705	.667	.777	.728	.830	.685	.890	.658
1989	.705	.667	.776	.729	.830	.685	.890	.658
1990[2]	.705	.667	.776	.729	.830	.685	.890	.658
1991[3]	.705	.667	.776	.729	.830	.685	.890	.658

[1]ERS estimates.
[2]Revised 1991.
[3]Preliminary.

Table 8—Cattle, calves, sheep and lambs, and hogs slaughtered: Average live weight and dressing yields, 1980-89 and 1990

Species	Live weight, commercial				Dressing yield[1] (federally inspected)	
	Average, 1980-89		1990		Average, 1980-89	1990
	Pounds	*Kilograms*	*Pounds*	*Kilograms*	--------- *Percent* ---------	
Cattle	1,091	494.9	1,136	515.3	59.4	60.2
Calves	248	112.5	283	128.4	60.9	63.2
Sheep and lambs	115	52.2	125	56.7	50.2	50.8
Hogs	245	111.1	249	112.9	71.5	72.4

[1]Dressing yield is the ratio of carcass weight to live weight.

Source: U.S. Dept. Agr., National Agricultural Statistics Service, *Livestock Slaughter, Annual Summary*, selected issues.

Table 9—Yield of trimmed, mostly boneless retail cuts and lean trim from steer beef carcasses by yield grade and degree of marbling, for two levels of fat remaining on cuts

Thickness of fat remaining	Yield grade					Degree of marbling			
	1	2	3	4	5	Traces	Slight	Small[1]	Modest
	Pounds of mostly boneless, trimmed cuts per pound of carcass weight[2]								
8 mm (.32 in.)	0.781	0.750	0.721	0.689	NA	0.778	0.746	0.724	0.700
0 mm	.735	.697	.666	.633	NA	.728	.694	.669	.643
	Kilograms of mostly boneless, trimmed retail cuts per pound of carcass weight								
8 mm (.32 in.)	.356	.342	.329	.314	NA	.355	.340	.330	.319
0 mm	.335	.318	.304	.289	NA	.332	.316	.305	.293

NA = Not available.

[1]"Small" is the minimum degree of marbling to qualify a young carcass for the Choice quality grade.

[2]Boneless except dorsal and transverse spinous processes left in short loin and dorsal spinous processes and rib bones left in rib cuts.

Source: All based on data from the Roman L. Hruska U.S. Meat Animal Research Center, reported in J.D. Crouse, L.V. Cundiff, R.M. Koch, and M.E. Dikeman, "Closely vs. Totally Trimmed Retail Product Yields of Carcass Beef," *Journal of Animal Science*, 66 (Supp. 1), p. 125.

Table 10—Veal and calf: Yield of bone-in cuts and boneless meat plus boneless to bone-in conversion factors

Carcass and wholesale cuts	Yield of bone-in wholesale cuts per 100 pounds of carcass		Yield of trimmed boneless meat[1] per 100 pounds of carcass or wholesale cut		Factors for converting pounds of boneless meat to untrimmed bone-in equivalent	
	Choice and Good	Standard, Utility, and Cull[2]	Choice and Good	Standard, Utility, and Cull[2]	Choice and Good	Standard, Utility, and Cull[2]
			Pounds			
Carcass, whole	100.0	100.0	68.5	69.5	1.46	1.44
Foresaddle	48.6	49.7	70.4	69.3	1.42	1.45
Chuck	26.1	27.6	73.5	72.8	1.36	1.38
Breast	14.3	14.3	62.8	62.6	1.59	1.62
Hotel rack, 7 rib	8.2	7.8	73.8	69.3	1.35	1.45
Hindsaddle	51.4	50.3	66.6	70.1	1.51	1.44
Leg, includes sirloin	36.4	38.8	72.8	73.5	1.38	1.37
Loin	7.0	6.4	73.3	69.8	1.36	1.45
Flank	4.8	3.4	53.4	68.5	1.87	1.48
Kidney knob	3.2	1.7	—	—	—	—
			Kilograms			
Carcass, whole	45.59	45.59	31.23	31.69	.67	.66
Foresaddle	22.16	22.66	32.10	31.60	.65	.66
Chuck	11.90	12.58	33.51	33.19	.62	.63
Breast	6.52	6.52	28.63	28.54	.72	.74
Hotel rack, 7 rib	3.74	3.56	33.65	31.60	.62	.66
Hindsaddle	23.43	22.93	30.36	31.96	.69	.66
Leg, includes sirloin	16.60	17.69	33.19	33.51	.63	.62
Loin	3.19	2.92	33.42	31.82	.62	.66
Flank	2.19	1.55	24.35	31.23	.85	.67
Kidney knob	1.46	.78	0	0	0	0

— = Not applicable.
[1]All cuts trimmed of fat exceeding ¼ to ½ inch.
[2]Cull grade no longer used.

Table 11—Choice beef: Yields of retail cuts per pound of carcass weight by yield grade[1]

Retail cut	Yield grade				
	1	2	3	4	5
			Pounds		
Rump, boneless	0.037	0.035	0.033	0.031	0.029
Inside round	.049	.045	.041	.037	.033
Outside round	.048	.046	.044	.042	.040
Round tip	.027	.026	.025	.024	.023
Sirloin	.091	.087	.083	.079	.075
Short loin	.053	.052	.051	.050	.049
Blade chuck	.099	.094	.089	.084	.079
Rib, short, 7 inches	.063	.062	.061	.060	.059
Chuck arm, boneless	.064	.061	.058	.055	.052
Brisket, boneless	.025	.023	.021	.019	.017
Flank steak	.005	.005	.005	.005	.005
Lean trim	.123	.113	.103	.093	.083
Ground beef	.133	.122	.111	.100	.089
Kidney	.003	.003	.003	.003	.003
Salable retail cuts	.820	.774	.728	.682	.636
Fat	.076	.127	.178	.229	.280
Bone	.104	.099	.094	.089	.084
Total	1.000	1.000	1.000	1.000	1.000
			Kilograms		
Rump, boneless	.017	.016	.015	.014	.013
Inside round	.022	.021	.019	.017	.015
Outside round	.022	.021	.020	.019	.018
Round tip	.012	.012	.011	.011	.010
Sirloin	.041	.040	.038	.036	.034
Short loin	.024	.024	.023	.023	.022
Blade chuck	.045	.043	.041	.038	.036
Rib, short, 7 inches	.029	.028	.028	.027	.027
Chuck arm, boneless	.029	.028	.026	.025	.024
Brisket, boneless	.011	.010	.010	.009	.008
Flank steak	.002	.002	.002	.002	.002
Lean trim	.056	.052	.047	.042	.038
Ground beef	.061	.056	.051	.046	.041
Kidney	.001	.001	.001	.001	.001
Salable retail cuts	.374	.353	.332	.311	.290
Fat	.035	.058	.081	.104	.128
Bone	.047	.045	.043	.041	.038
Total	.456	.456	.456	.456	.456

[1]Reflects fat trim levels of ¼ to ½ inch (6.35 to 12.7 mm)

Source: U.S. Dept. Agr., Consumer and Marketing Service, *USDA Yield Grades for Beef*, Marketing Bulletin 45, revised May 1974.

Table 12—Physical composition of raw retail beef cuts trimmed to ¼-inch fat

Cut and grade	Separable lean	Separable fat	Refuse[1]
	Percent		
All grades:			
Brisket—			
Whole	69.6	30.1	0.3
Flat-half	72.8	27.2	0
Point-half	66.8	32.6	.6
Chuck—			
Arm	66.9	17.9	15.2
Blade	64.8	16.3	18.9
Rib—			
Whole	58.5	25.4	16.1
Large end	57.5	26.4	16.1
Small end	60.2	23.8	16.0
Round—			
Bottom	85.2	11.9	2.9
Eye	84.8	14.5	.7
Tip	83.1	13.3	3.6
Top	89.5	8.5	2.0
Tenderloin	74.9	23.7	1.4
Top loin	73.6	17.5	8.9
Top sirloin	80.0	14.9	5.1
Choice:			
Chuck—			
Arm	66.0	19.0	15.0
Blade	63.4	17.7	18.9
Flank[2]	93.0	5.0	2.0
Rib—			
Whole	56.8	26.8	16.4
Eye[2]	75.0	20.7	4.3
Large end	55.8	28.2	16.0
Small end	58.6	24.7	16.7
Shortribs	41.0	32.0	27.0
Round—			
Full cut	83.0	11.1	5.9
Bottom	84.1	12.5	3.4
Eye	84.0	15.1	.9
Tip	81.6	14.2	4.2
Top	89.1	8.6	2.3
Choice--Continued			
Shank	60.0	6.0	34.0
Short loin—			
Porterhouse	63.0	18.5	18.5
T-bone	60.6	17.1	22.3
Top loin	71.7	18.5	9.8
Tenderloin	74.7	23.6	1.7
Top sirloin	79.0	15.8	5.2
Select:			
Chuck—			
Arm	68.0	16.5	15.5
Blade	66.3	14.7	19.0
Rib—			
Whole	60.3	23.7	16.0
Large end	59.4	24.3	16.3
Small end	61.9	22.8	15.3
Round—			
Full cut	83.0	11.1	5.9
Bottom	86.5	11.3	2.2
Eye	85.7	13.8	.5
Tip	84.7	12.1	3.2
Top	89.9	8.3	1.8
Tenderloin	75.0	23.8	1.2
Top loin	75.7	16.5	7.8
Top sirloin	81.2	13.9	5.0
Prime:			
Rib—			
Whole	56.1	28.6	15.3
Large end	55.1	31.0	13.9
Small end	57.5	25.0	17.5
Round—			
Tip	82.5	12.1	5.4
Top	93.7	4.9	1.4
Tenderloin	74.9	22.3	2.8
Top loin	72.4	22.3	5.3

[1]Mostly bone or connective tissue.
[2]Trimmed to 0-inch fat.

Source: U.S. Dept. Agr., Human Nutrition Information Service, *Composition of Foods: Beef Products*, AH-8-13, May 1990, pp. 19-22.

Table 13—Fresh pork from barrows and gilts: Yields of selected cuts

Carcass and wholesale cuts	Yield of wholesale cuts per pound of--				Yield of trimmed boneless meat per pound of wholesale cut		Factors for converting 1 pound of boneless meat to bone-in equivalent	
	Live weight		Carcass					
	Pounds	*Kilograms*	*Pounds*	*Kilograms*	*Pounds*	*Kilograms*	*Pounds*	*Kilograms*
Packer-dressed carcass	0.7350	0.335 1	1.0000	0.455 9	0.7290	0.332 4	1.3700	0.624 6
Boneless, skinless meat	.5358	.244 3	.7290	.332 4	1.0000	.455 9	1.0000	.455 9
Hams:								
Skinned, bone-in	.1770	.080 7	.2408	.109 8	.6600	.300 9	1.5200	.693 0
Skinned, semi-boneless	.1416	.064 6	.1927	.087 9	.8000	.364 7	1.2500	.569 9
Skinless, boneless	.1168	.053 3	.1589	.072 4	1.0000	.455 9	1.0000	.455 9
Shoulders:								
Picnics—								
Skinned, bone-in	.0680	.031 0	.0925	.042 2	.7500	.341 9	1.3300	.606 4
Skinless, boneless	.0510	.023 3	.0694	.031 6	1.0000	.455 9	1.0000	.455 9
Butts, skinless—								
Bone-in (Boston)	.0480	.021 9	.0653	.029 8	.9400	.428 6	1.0600	.483 3
Boneless	.0451	.020 6	.0614	.028 0	1.0000	.455 9	1.0000	.455 9
Loins:								
Bone-in	.1380	.062 9	.1878	.085 6	.7800	.355 6	1.2800	.583 6
Boneless	.1076	.049 1	.1464	.066 7	1.0000	.455 9	1.0000	.455 9
Bellies:								
Slab, skin on	.1250	.057 0	.1701	.077 6	.7500	.341 9	1.3300	.606 4
Slab, skin off	.0938	.042 8	.1276	.058 2	1.0000	.455 9	1.0000	.455 9
Jowls (bacon squares)	.0100	.004 6	.0136	.006 2	—	—	—	—
Spareribs	.0290	.013 2	.0395	.018 0	—	—	—	—
Feet, front	.0080	.003 6	.0109	.005 0	—	—	—	—
Tails	.0020	.000 9	.0027	.001 2	—	—	—	—
Neckbones	.0100	.004 6	.0136	.006 2	—	—	—	—
Trimmings:								
72-percent lean	.0270	.012 3	.0367	.016 7	—	—	—	—
42-percent lean	.0090	.004 1	.0122	.005 6	—	—	—	—
Fat, skin, and other	.0570	.026 0	.0776	.035 4	—	—	—	—
Bone	.1417	.064 6	.1928	.087 9	—	—	—	—
Shrink and loss	.0270	.012 3	.0367	.016 7	—	—	—	—

— = Not applicable.

Source: Lawrence A. Duewer, Kevin Bost, and Gene Futrell, "Revisions in Conversion Factors for Pork Consumption Series," *Livestock and Poultry Situation and Outlook Report*, LPS-45, Jan. 1991, p. 37.

Table 14—Lamb: Yields of bone-in cuts and boneless meat plus boneless to bone-in conversion factors[1]

Wholesale cuts	Yield per 100 pounds of carcass weight		Boneless meat per 100 pounds of wholesale cut[2]		Factors for converting trimmed boneless meat to bone-in equivalent[2]	
	Pounds	*Kilograms*	*Pounds*	*Kilograms*	*Pounds*	*Kilograms*
Carcass, whole[3]	100.0	45.592	65.8	30.000	1.52	0.693
Foresaddle, whole	51.4	23.434	65.9	30.045	1.52	.693
Breast, including shank	16.4	7.477	59.9	27.310	1.67	.761
Chuck	27.2	12.401	70.2	32.006	1.42	.647
Hotel rack	7.8	3.556	63.5	28.951	1.57	.716
Hindsaddle, whole	48.6	22.158	65.7	29.954	1.52	.693
Leg	31.0	14.134	69.0	31.459	1.45	.661
Loin, including flank and kidney	17.6	8.024	60.3	27.492	1.66	.757

[1]Based on Prime, Choice, and Good yield grade 3 carcasses.
[2]USDA boning practice of cuts trimmed to ¼ inch of fat.
[3]Heart, lungs, trachea, and esophagus have been removed.
Source: U.S. Dept. Agr., Economics, Statistics, and Cooperatives Service, *Conversion Factors and Weights and Measures for Agricultural Commodities and Their Products*, SB-616, Mar. 1979, p. 20 (unchanged except for metrication).

Table 15—Poultry: Average live weight and ready-to-cook yield, 1986-90[1]

Poultry	Average live weight				Yield, live to ready-to-cook[2]	
	1986-89 weighted average	1990	1986-89 weighted average	1990	1986-89 weighted average	1990
	---- *Kilograms* ----		----- *Pounds* -----		------ *Percent* ------	
Chicken:						
Young	1.95	1.98	4.29	4.37	72.59	72.62
Mature	2.07	2.14	4.57	4.71	61.73	61.01
All	1.95	1.99	4.30	4.38	72.11	72.25
Turkeys:						
Roaster, fryer	4.38	4.43	9.65	9.77	77.70	77.99
Young	9.40	9.68	20.72	21.34	79.31	79.16
Old	10.55	11.11	23.27	24.49	76.55	76.74
All	9.32	9.64	20.56	21.25	79.28	79.13
Ducks	2.96	2.98	6.54	6.57	70.71	70.78

[1]Based on total poultry slaughtered under Federal inspection.
[2]Yield of ready-to-cook weight, including neck and giblets, as a percentage of total live weight inspected.
Source: U.S. Dept. Agr., National Agricultural Statistics Service, *Poultry Slaughter*, May issues.

Table 16—Milk products: Federal standards of composition and average commercial contents

Dairy products	Federal standards			Commercial 1989 milkfat
	Milkfat minimum	Milkfat maximum	Milk solids not fat minimum	
	Percent			
Milks:				
Whole	3.25	—	8.25	3.30
Lowfat	.50	2.0	8.25	1.74
Skim	—	.5	8.25	.20
Creams and mixtures:				
Light	18.0	30.0	—	18.84
Light whipping	30.0	36.0	—	—
Heavy	36.0	—	—	35.86
Sour	18.0	—	—	17.31
Half and half	10.5	18.0	—	10.91
Eggnog	6.0	—	8.25	7.61

	Federal standards		Commercial	
	Milkfat minimum	Total milk solids minimum	Milkfat	Milk solids not fat
	Percent			
Condensed products:				
Evaporated milk	7.5	25.5	7.90	18.00
Sweetened condensed milk	8.5	28.0	8.50	19.50
Condensed skim milk	—	—	.20	29.80
Sweetened condensed skim milk	—	24.0	.20	29.80
Condensed buttermilk	—	—	1.50	26.40

	Federal standards				
	Milkfat		Milk solids not fat minimum	Total milk solids	
	Minimum	Maximum		Minimum	Maximum
	Percent				
Frozen products:					
Ice cream	10.0	—	6.0	20.0	—
Ice milk	2.0	7.0	—	11.0	—
Fruit sherbet	1.0	2.0	—	2.0	5.0

Continued—

Table 16—Milk products: Federal standards of composition and average commercial contents—Continued

Dairy products	Federal standards		Commercial	
	Milkfat minimum	Moisture maximum	Milkfat	Milk solids not fat
		Percent		
Dry products:				
Dry whole milk	26.0	5.0	26.50	71.00
Nonfat dry milk	1.5	5.0	.80	96.20
Dry buttermilk[1]	4.5	4.0	5.30	91.90
Dry whey[1]	—	5.0	1.20	94.30

	Federal standards	Commercial	
	Milkfat minimum	Milkfat	Milk solids not fat
		Percent	
Milkfat products:			
Butter	80.0	80.30	1.00
Butteroil, anhydrous milkfat, or ghee	—	99.80	.10
Plastic cream	—	80.10	1.10

— = Not applicable.
[1]Standards for U.S. Extra Grade.

Sources: U.S. Dept. Agr., Food Safety and Quality Service, *Federal and State Standards for the Composition of Milk Products (and Certain Non-Milkfat Products) as of January 1, 1980*, Handbook No. 51, revised Sept. 1980.

Table 17—Limits on selected contents of cheeses

Cheese products	Milkfat in solids minimum	Moisture	
		Minimum	Maximum
		Percent	
Hard:			
Asiago—			
Fresh	50.0	—	45.0
Medium	45.0	—	35.0
Aged	42.0	—	32.0
Blue	50.0	—	46.0
Brick	50.0	—	44.0
Brie or Camembert[1]	50.0	—	—
Cheddar	50.0	—	39.0
Colby	50.0	—	40.0
Edam	40.0	—	45.0
Gorgonzola	50.0	—	42.0
Gouda	46.0	—	45.0
Granular	50.0	—	39.0
Gruyere	45.0	—	39.0
Hard	50.0	—	39.0
Hard grating	32.0	—	34.0
Monterey	50.0	—	44.0
High-moisture jack	50.0	40.0	50.0
Mozzarella or Scamorza—			
Whole milk	45.0	52.0	60.0
Low-moisture	45.0	45.0	52.0
Part skim	30.0	52.0	60.0
Low-moisture/part skim	30.0	45.0	52.0
Munster	50.0	—	46.0
Parmesan	32.0	—	32.0
Provolone	45.0	—	45.0
Romano	38.0	—	34.0
Swiss (Emmentaler)	43.0	—	41.0
Semisoft	50.0	39.0	50.0
Washed curd	50.0	—	42.0
Pasteurized processed products—			
Cheese	[2]	—	[3]
Cheese food	23.0	—	44.0
Cheese spread	20.0	44.0	60.0

	Milkfat		Moisture maximum
	Minimum	Maximum	
		Percent	
Fresh:			
Cottage	4.0	—	80.0
Lowfat cottage	.5	2.0	82.5
Cream	33.0	—	55.0
Neufchatel	20.0	33.0	65.0

— = Not applicable.

[1]Covered by the standard for soft ripened cheese.

[2]Same as for cheese used or average of cheeses used but not less than 47.0, except for Swiss and Gruyere.

[3]1 percent above moisture of cheese used or average of cheeses used but generally limited to 43.0 percent.

Source: U.S. Dept. Agr., Food Safety and Quality Service. *Federal and State Standards for the Composition of Milk Products (and Certain Non-Milkfat Products) as of January 1, 1980,* Handbook No. 51, revised Sept. 1980.

Table 18—Manufactured dairy products: Factors for obtaining farm milk equivalent on milkfat and skim solids bases[1]

Product	Milkfat basis	Skim solids basis
Butter	21.8	0.12
American cheese	9.23	9.9
Other cheese	7.49	9.99
Canned milk	2.15	2.09
Dry whole milk	7.36	8.26
Nonfat dry milk	.22	11.58

[1]Used to convert weight of manufactured dairy products to equivalent weight of farm milk. Subject to change as technical parameters become available.

Table 19—Dairy products: Net weight of standard units[1]

Product	Grams per liter	Pounds per gallon	Pounds per liter	Kilograms per gallon
Whole milk with 3.7% fat, 8.62% S.N.F.[2]	1 031	8.60	2.27	3.90
Milk, standardized, 3.5% fat 8.64% S.N.F.	1 032	8.61	2.28	3.91
Skim milk, regular	1 034	8.63	2.28	3.91
Skim milk, modified	1 039	8.67	2.29	3.93
Cultured buttermilk	1 038	8.66	2.29	3.93
Half and half, regular	1 023	8.54	2.26	3.87
Chocolate flavored milk	1 054	8.80	2.33	3.99
Chocolate flavored drink	1 054	8.80	2.33	3.99
Cream:				
18%	1 019	8.50	2.25	3.86
20%	1 017	8.49	2.24	3.85
36%	1 003	8.37	2.21	3.80
40%	1 001	8.35	2.21	3.79
Evaporated milk[3]	19 730[2]	43.5[2]	—	—

— = Not applicable.
[1]At 10°C (50°F).
[2]S.N.F. = Solids not fat.
[3]Evaporated milk weights are per case of 48, 14.5-ounce cans.

Table 20—Limits on content of selected ingredients for categories of processed meat products

Product	Ingredients	Minimum of[1]	Maximum of[1]
		Percent	
Baby food:			
High meat dinner	Meat[2]	26	—
Meat and broth	Meat	61	—
Vegetable with meat	Meat	8	—
Bacon (cooked)	Uncooked bacon	40	—
Bacon and tomato spread	Cooked bacon	20	—
Bacon dressing	Smoked bacon	8	—
Barbecue sauce with meat	Meat (cooked basis)	35	—
Barbecued meat	Fresh uncooked meat	—	70
Beans with bacon or ham in sauce	Bacon or ham	12	—
Beans with frankfurters in sauce	Franks	20	—
Beans with meat in sauce	Meat	12	—
Beans with meatballs in sauce	Meatballs	20	—
Beef a la king	Beef (cooked basis)	20	—
Beef a la mode	Beef	50	—
Beef almondine with vegetables	Beef (cooked basis)	18	—
Beef and dumplings with gravy or beef and gravy with dumplings	Beef	25	—
Beef burgundy	Beef	50	—
Beef carbonade	Beef	50	—
Beef roulade	Beef (cooked basis)	50	—
Beef sausage (raw)	Fat	—	30
	Water	—	3
Beef Stroganoff	Uncooked beef	45	—
	Cooked beef	30	—
Beef with barbecue sauce	Beef (cooked basis)	50	—
Beef with gravy	Beef (cooked basis)	50	—
Breaded steaks, chops, and other	Breading	—	30
Breakfast (frozen product containing meat)	Cooked meat	15	—
Breakfast sausage	Fat	—	50
	Water	—	3
	Binders and extenders	—	3.5
Brown and serve sausage	Fat	—	35
	Added water	—	10
Brunswick stew	Meat (at least 2 kinds)	25	—
Burgundy sauce with beef and noodles	Beef (cooked basis)	25	—
	Noodles	—	20
Burrito	Meat	15	—
Cabbage rolls with meat in sauce	Meat	12	—
Cannelloni with meat and sauce	Meat	10	—
Cappelletti with meat in sauce	Meat	12	—
Cheesefurter	Sufficient cheese to characterize	—	—
Chili con carne	Meat	40	—
Chili con carne with beans	Meat	25	—
Chili hot dog with meat	Meat in chili	40	—
Chili mac	Meat	16	—
Chili sauce with meat	Meat	6	—
Chop suey (American style) with macaroni and meat	Meat	25	—
Chop suey vegetables with meat	Meat	12	—
Chopped ham (fresh, cured, or smoked ham)	Water	—	3

See footnotes at end of table.

Continued—

Table 20—Limits on content of selected ingredients for categories of processed meat products—Continued

Product	Ingredients	Minimum of[1]	Maximum of[1]
		Percent	
Chow mein vegetables with meat	Meat	12	—
	Noodles	—	33.3
Chow mein vegetables with meat and noodles	Meat	8	—
Corn dog	Frankfurter	35	—
	Batter	—	65
Corned beef and cabbage	Corned beef (cooked basis)	25	—
Corned beef hash	Beef (cooked basis)	35	—
	Fat	—	15
	Moisture	—	72
Country ham	Salt	4	—
Creamed meat products or creamed sauce with meat products	Meat product (cooked basis)	18	—
Crepe with meat	Meat (cooked basis)	20	—
	Meat (cooked with another major ingredient)	10	—
Croquettes	Meat (cooked basis)	35	—
	Meat (fresh basis)	50	—
Curried sauce with meat and rice	Meat (cooked basis)	35	—
	Cooked rice	—	50
Deviled ham	Fat	—	35
	Added moisture	—	0
	Added cereal	—	0
Dinner (frozen product containing meat)	Meat (cooked basis)	25	—
Dumplings with meat in sauce	Meat	18	—
Egg foo yong with meat	Meat	12	—
Egg roll with meat	Meat	10	—
Egg roll with meat and seafood	Meat	5	—
Eggs benedict	Cured smoked ham	18	—
Enchilada with meat	Meat	15	—
Entree, meat or meat food product and one vegetable	Meat (cooked basis)	50	—
Frankfurter, bologna, and similar cooked sausage (skeletal meat only)	Fat	—	30
	Added water	—	10
	Corn syrup	—	2
	Poultry meat	—	15
Frankfurter, bologna, and similar cooked sausage with byproducts or variety meats	Skeletal meat	15	—
	Must be distinctively labeled byproducts and variety meats individually named in ingredient list—		
	Fat	—	30
	Added water	—	10
	Corn syrup	—	2
Frankfurter, bologna, and similar cooked sausage with byproducts or variety meats and which also contain nonmeat binders	Skeletal meat	15	—
	Must be distinctively labeled; byproducts, variety meats, and binders must be named in proper order in ingredient list—		
	Fat	—	30
	Added water	—	10
	Corn syrup	—	2
	Nonmeat binders, or	—	3.5
	Isolated soy protein	—	2

See footnotes at end of table.

Continued—

Table 20—Limits on content of selected ingredients for categories of processed meat products—Continued

Product	Ingredients	Minimum of[1]	Maximum of[1]
		Percent	
Fried rice with meat	Meat	10	—
Fritter	Meat	35	—
	Breading	—	65
German style potato salad with bacon	Bacon (cooked basis)	14	—
Goulash	Meat	25	—
Gravy	Meat or 25% meat stock	6	—
Gravy and sauerbraten	Meat (cooked basis)	35	—
Gravy and swiss steak	Meat (cooked basis)	35	—
Gravy and yankee pot roast	Meat (cooked basis)	35	—
Gravy with beef	Beef (cooked basis)	35	—
Ham (canned)	Total weight gain	—	8
Ham, cooked or cooked and smoked	Cooked less than or equal to weight of fresh ham	—	—
	Added water must be labeled "Ham, Water Added"	—	10
Ham a la king	Ham (cooked basis)	20	—
Ham and cheese spread	Ham (cooked basis)	25	—
Ham chowder:			
Ready-to-eat	Ham (cooked basis)	5	—
Condensed	Ham (cooked basis)	10	—
Ham salad	Ham (cooked basis)	35	—
Ham spread	Ham	50	—
Hamburger, hamburg, burger, ground beef, or chopped beef	Fat	—	30
	Extenders	—	0
Hash	Meat (cooked basis)	35	—
Hors d'oeuvre	Meat (cooked basis)	15	—
	Bacon (cooked basis)	10	—
Jambalaya with meat	Meat (cooked basis)	25	—
Knish	Meat (cooked basis)	15	—
Kreplach	Meat	20	—
Lasagna with meat and sauce, or cheese lasagna with meat	Meat	12	—
Lasagna with meat sauce	Meat	6	—
Lasagna with sauce, cheese, and dry sausage	Dry sausage	8	—
Lima beans with ham or bacon in sauce	Ham or bacon	12	—
Liver products, such as liver loaf, liver paste, liver pate, liver cheese, liver spread, liverwurst, braunschweiger, and liver sausage	Liver	30	—
Macaroni and beef in sauce	Beef	12	—
Macaroni and cheese with ham	Ham (cooked basis)	12	—
Macaroni and meat	Meat	25	—
Macaroni salad with ham or beef	Meat (cooked basis)	12	—
Manicotti with meat in sauce	Meat	10	—
Margarine or oleomargarine	Fat (must specify fat)	80	—
Meat and dumplings in sauce	Meat	25	—
Meat and vegetables	Meat	50	—

See footnotes at end of table.

Continued—

Table 20—Limits on content of selected ingredients for categories of processed meat products—Continued

Product	Ingredients	Minimum of[1]	Maximum of[1]
		Percent	
Meat casserole	Uncooked meat	25	—
	Cooked meat	18	—
Meat curry	Meat	50	—
Meat loaf (baked or oven-ready)	Meat	65	—
	Cereal products	—	12
Meat pasty	Meat	25	—
Meat pie or vegetable meat pie	Meat	25	—
Meat ravioli	Meat in ravioli	10	—
Meat ravioli in sauce	Meat in ravioli	10	—
	Ravioli in product	50	—
Meat salad	Meat (cooked basis)	35	—
Meat sauce	Meat	6	—
Meat soup:			
Ready-to-eat	Meat	5	—
Condensed	Meat	10	—
Meat spread	Meat	50	—
Meat stew	Meat	25	—
Meat taco	Meat	15	—
Meat taco filling	Meat	40	—
Meat turnover	Meat	25	—
Meat Wellington	Cooked tenderloin	50	—
	Pastry	—	30
Meatballs	Meat	65	—
	Extenders	—	12
Meatballs in sauce	Meatballs (cooked basis)	50	—
Meatball Stroganoff	Meatballs (cooked basis)	45	—
Mince meat	Meat	12	—
Mousaka	Meat (labeled "Eggplant and Meat Casserole")	25	—
New England boiled dinner	Cooked corned beef	25	—
Omelet with bacon	Bacon (cooked basis)	9	—
Omelet with dry sausage	Dry sausage	12	—
Omelet with ham	Ham (cooked basis)	18	—
Omelet with meat food product, such as creamed chipped beef or corned beef hash	Meat food product	25	—
Omelet, western	Cooked ham	18	—
Pate de foie	Liver	30	—
Pepper steak (Chinese)	Beef (cooked basis)	30	—
Peppers and Italian sausage in sauce	Sausage (cooked basis)	20	—
Pizza with meat	Meat	15	—
Pizza with sausage	Sausage (cooked basis)	12	—
	Dry sausage (pepperoni)	10	—
Pork sausage	Fat	—	50
	Water	—	3
	Byproducts or extenders	—	0
Pork with barbecue sauce	Pork (cooked basis)	50	—
Pork with dressing	Pork (cooked basis)	50	—
Pork with dressing and gravy	Pork (cooked basis)	30	—
Prosciutto	Dry-cured ham coated with spices	—	—
Quiche Lorraine	Bacon or ham	8	—
Rice with meat	Meat	12	—

See footnotes at end of table.

Continued—

Table 20—Limits on content of selected ingredients for categories of processed meat products—Continued

Product	Ingredients	Minimum of[1]	Maximum of[1]
		Percent	
Salisbury steak	Meat	65	—
	Extenders	—	12
Sandwich, meat	Meat	35	—
	Bread	—	50
Sauerbraten	Beef (cooked basis)	50	—
Sauerkraut balls with meat	Meat	30	—
Sauerkraut with wieners and juice	Wieners	20	—
Sausage with sauerkraut in sauce	Sausage	40	—
Scalloped potatoes and ham or sausage	Ham or sausage (cooked basis)	20	—
Scallopini	Meat (cooked basis)	35	—
Scrambled eggs with ham in pancake	Ham (cooked basis)	9	—
Scrapple	Meat/meat byproducts	40	—
Shepherd's pie	Meat	25	—
	Mashed potatoes	—	50
Sloppy joe	Meat (cooked basis)	35	—
Snack	Meat (cooked basis)	15	—
	Bacon (cooked basis)	10	—
Spaghetti sauce with meat	Meat	6	—
Spaghetti with meat or meatballs in sauce	Meat	12	—
Spanish rice with meat	Meat (cooked basis)	20	—
Stuffed cabbage with meat in sauce	Meat	12	—
Stuffed pepper with meat in sauce	Meat	12	—
Sukiyaki	Meat	30	—
Sweet and sour meat	Meat	25	—
	Fruit	16	—
Swiss steak with gravy	Meat (cooked basis)	50	—
Tamale	Meat	25	—
Tamale with sauce or gravy	Meat	20	—
Tamale pie	Meat	20	—
Taquito	Meat	15	—
Tongue spread	Tongue	50	—
Tortellini with meat	Meat	10	—
Tortellini with meat in sauce	Cooked meat tortellini	50	—
Veal and peppers in sauce	Meat (cooked basis)	30	—
Veal bird	Meat	60	—
	Stuffing	—	40
Veal cordon bleu	Veal	60	—
	Ham	5	—
Veal fricassee	Meat	40	—
Veal parmigiana	Breaded veal in sauce	40	—
Veal scallopini	Veal (cooked basis)	35	—
Veal steak	Beef	—	20
	Fat	—	30
Vegetable and meat casserole	Meat	25	—
Vegetable and meat pie	Meat	25	—
Won ton soup	Meat	5	—

[1]Other conditions and restrictions may apply. For specific information, contact Standards and Labeling Division, Food Safety and Inspection Service, U.S. Dept. Agr.

[2]For actual products the applicable species name, for example, "beef" or "pork," is substituted for the word "meat."

Source: U.S. Dept. Agr., Food Safety and Inspection Service, *Meat and Poultry Products: A Consumer Guide to Content and Labeling Requirements*. Home and Garden Bul. No. 236, July 1981.

Table 21—Factors relating to shell eggs

U.S. weight classes for consumer grades of shell eggs	Minimum net weight per—					
	Case (30 dozen)		Dozen		Dozen	
	Pounds	*Kilograms*	*Ounces*	*Grams*	*Pounds*	*Kilograms*
Jumbo	56.0	25.40	30	850.48	1.88	0.85
Extra large	50.5	22.90	27	765.44	1.69	.77
Large	45.0	20.41	24	680.39	1.50	.68
Medium	39.5	17.91	21	595.34	1.31	.59
Small	34.0	15.42	18	510.29	1.12	.51
Peewee	28.0	12.70	15	425.24	.94	.43
Average weight sold at retail	47.0	21.32	25	708.74	1.57	.71
	Liquid or frozen, minimum amount approximating 1 dozen eggs					
	Whole		Yolk		Albumen	
	Pounds	*Kilograms*	*Pounds*	*Kilograms*	*Pounds*	*Kilograms*
Jumbo	1.64	0.74	0.71	0.32	0.93	0.42
Extra large	1.48	.67	.64	.29	.84	.38
Large	1.32	.60	.57	.26	.75	.34
Medium	1.16	.53	.50	.23	.66	.30
Small	1.00	.45	.43	.20	.57	.26
Peewee	.80	.36	.35	.16	.47	.21
Average weight sold at retail	1.38	.63	.60	.27	.78	.35
	Dried, minimum amount approximating 1 dozen eggs					
	Whole		Yolk		Albumen	
	Pounds	*Kilograms*	*Pounds*	*Kilograms*	*Pounds*	*Kilograms*
Jumbo	0.42	0.19	0.32	0.15	0.12	0.05
Extra large	.38	.17	.29	.13	.11	.05
Large	.34	.15	.26	.12	.10	.05
Medium	.30	.14	.23	.10	.09	.04
Small	.26	.12	.20	.09	.08	.04
Peewee	.21	.10	.16	.07	.06	.03
Average weight sold at retail	.35	.16	.27	.12	.10	.05

Source: U.S. Dept. Agr., Economics, Statistics, and Cooperatives Service, *Conversion Factors and Weights and Measures for Agricultural Commodities and Their Products*, SB-616, Mar. 1979, p. 30 (reviewed but unchanged except for metrication).

Table 22—Estimated conversion factors for yields of liquid eggs and dried eggs and the moisture content of dried eggs, by type of product, 1991

Egg products	Liquid yield from 30 dozen shell eggs[1]	Yield from 1 dozen shell eggs		Requirements for 1 pound of dried egg products		Yield of dried egg product from		Approximate moisture content of dried egg product[3]
		Liquid egg	Dried egg	Liquid egg[2]	Shell eggs	100 pounds of liquid	30 dozen shell eggs	
	Kilograms				*Dozen*	*Kilograms*		*Percent*
Metric:								
Whole eggs	18.0	0.599	0.150	1.7	3.03	11.36	4.49	3.5-4.0
Albumen--								
Flake	10.6	.352	.045	3.4	10.00	5.84	1.36	12.0-14.0
Spray	10.6	.352	.043	3.7	10.64	5.29	1.28	6.0-8.0
Yolk	7.4	.246	.106	1.0	4.29	20.19	3.17	3.5-4.5
	Pounds				*Dozen*	*Pounds*		*Percent*
U.S. customary weights:								
Whole eggs	39.6	1.320	0.330	3.8	3.03	25.05	9.90	3.5-4.0
Albumen—								
Flake	23.3	.777	.100	7.6	10.00	12.88	3.00	12.0-14.0
Spray	23.3	.777	.094	8.2	10.64	11.66	2.82	6.0-8.0
Yolk	16.3	.543	.233	2.2	4.29	44.51	6.99	3.5-4.5

Note: Data represent recent commercial experience as well as the effect of current sanitary regulations on yields of egg products.

[1]Based on whole eggs, 24.2% total egg solids; egg whites, 11.5% total egg solids; and yolks, 43% minimum total egg solids. Large shell eggs 45 pounds per 30-dozen case.

[2]Concentration factors used by the U.S. Department of Agriculture for estimating the conversion of dried to liquid to check yields and volume reports.

[3]Values recommended by U.S. Dept. Agr., Agricultural Marketing Service. "Approximate Moisture Content of Dried Egg Product," Poultry Division. Figures are based on moisture for whole eggs at 3.5%, flake albumen at 11.5% solids, and 12% moisture, spray dried albumen at 11.5% solids and 6% moisture, and yolk at 43% solids and 3.5% moisture.

Table 23—Limits on content of selected ingredients for categories of processed poultry[1]

Product	Ingredients	Minimum of	Maximum of
		Percent	
Baby food:			
High poultry dinner	Poultry meat, giblets, skin, and fats	18.75	—
Poultry with broth	Poultry meat, giblets, skin, and fats	43	—
Beans and rice with poultry	Poultry meat	6	—
Breaded poultry	Breading	—	30
Canned boned poultry:			
Boned (kind), solid pack	Poultry meat, skin, and fats	95	—
Boned (kind)	Poultry meat, skin, and fats	90	—
Boned (kind), with broth	Poultry meat, skin, and fats	80	—
Boned (kind), with specified percentage of broth	Poultry meat, skin, and fats	50	—
Cannelloni with poultry	Poultry meat	7	—
Chicken cordon bleu	Boneless chicken breast	60	—
	Ham and swiss, gruyere, or mozzarella cheese	5	—
	Breading	—	30
Creamed poultry	Poultry meat	20	—
Egg roll with poultry	Poultry meat	2	—
Eggplant parmigiana with poultry	Poultry meat	8	—
Entree, poultry or poultry food products and one vegetable	Poultry meat or poultry food product	37.5	—
Gravy with poultry	Poultry meat	35	—
Noodles or dumplings with poultry	Poultry meat	6	—
Poultry a la kiev	Breastmeat	—	—
Poultry a la king	Poultry meat	20	—
Poultry almondine	Poultry meat	50	—
Poultry brunswick stew	Poultry meat	12	—
Poultry burgers	Poultry meat	100	—
Poultry burgundy	Poultry meat	50	—
Poultry burrito	Poultry meat	10	—
Poultry cacciatore	Poultry meat or 40% with bone	20	—
Poultry casserole	Poultry meat	18	—
Poultry chili	Poultry meat	28	—
Poultry chili with beans	Poultry meat	17	—
Poultry chop suey	Poultry meat	4	—
Poultry chow mein without noodles	Poultry meat	4	—
Poultry creole with rice	Poultry meat	35	—
	Cooked rice	—	50
Poultry croquette	Poultry meat	25	—
Poultry croquette with macaroni and cheese	Poultry meat or croquettes	29	—
Poultry dinner, frozen	Poultry meat	18	—
Poultry empanadillo	Poultry meat	25	—
Poultry fricassee	Poultry wings (cooked basis with bone)	20	—
Poultry fricassee of wings	Poultry meat	40	—
Poultry hash	Poultry meat	30	—
Poultry lasagna	Poultry meat	8	—
Poultry livers with rice and gravy	Livers in gravy or 17.5% total product	30	—
Poultry meat loaf	Raw poultry	65	—
	Poultry meat	50	—
	Extenders	—	12
Poultry paella	Meat	35	—
	Cooked rice	35	—
Poultry parmigiana	Breaded poultry	40	—

See footnote at end of table.

Continued--

Table 23—Limits on content of selected ingredients for categories of processed poultry[1]—Continued

Product	Ingredients	Minimum of	Maximum of
		Percent	
Poultry pie	Poultry meat	14	—
Poultry ravioli	Poultry meat	2	—
Poultry roll	Binding agents	—	3
Poultry roll with broth	Poultry broth	2	—
Poultry roll with gelatin	Gelatin	3	—
Poultry roll with natural juices	Cooked-out juices	2	—
Poultry salad	Poultry meat	25	—
Poultry scallopini	Poultry meat	35	—
Poultry soup:			
Ready-to-eat	Poultry meat	2	—
Condensed	Poultry meat	4	—
Poultry stew	Poultry meat	12	—
Poultry stroganoff	Poultry meat	30	—
Poultry tamale	Poultry meat	6	—
Poultry tetrazzini	Poultry meat	15	—
Poultry turnover	Poultry meat	14	—
Poultry Wellington	Boneless poultry breast	50	—
	Pastry	—	30
Poultry with gravy	Poultry meat	35	—
Poultry with gravy and dressing	Poultry meat	25	—
Poultry with noodles au gratin	Poultry meat	18	—
Poultry with noodles or dumplings	Poultry meat or 30% with bone	15	—
Poultry with rice	Poultry meat	15	—
Poultry with vegetables	Poultry meat	15	—
Sauce with poultry or poultry sauce	Poultry meat	6	—
Stuffed cabbage with poultry	Poultry meat	8	—
Stuffed peppers with poultry	Poultry meat	8	—
Turkey ham	Cured turkey thigh meat only	—	—

[1]Other conditions and restrictions may apply. For specific information contact Standards and Labeling Division, Food Safety and Inspection Service, U.S. Dept. Agr.

Source: U.S. Dept. Agr., Food Safety and Inspection Service, *Meat and Poultry Products: A Consumer Guide to Content and Labeling Requirements*, Home and Garden Bul. No. 236, July 1981.

Table 24—Fish and shellfish: Factors relating to specified weights[1]

Product	Factors for converting to—				Factors for converting to—			
	Round weight[2]	Reported weight[3]	Dressed weight[4]	Edible weight[5]	Round weight[2]	Reported weight[3]	Dressed weight[4]	Edible weight[5]
	Pounds				*Kilograms*			
Fish, fresh and frozen:								
Not packaged, domestically produced—								
Round weight	1.00	1.00	0.70	0.45	0.45	0.45	0.32	0.20
Dressed weight	1.43	NA	1.00	.64	.65	.00	.45	.29
Edible weight	2.22	NA	1.56	1.00	1.01	.00	.71	.45
Packaged, domestically produced—								
Round weight	1.00	.34	NA	.34	.45	.15	NA	.15
Packaged weight	2.96	1.00	NA	1.00	1.34	.45	NA	.45
Imports, reported weight	1.95	1.00	1.36	.88	.88	.45	.62	.40
Shellfish, fresh and frozen:								
Not packaged, including shrimp, oysters, crab, lobster, and others—								
Reported weight	NA	1.00	NA	.45	NA	.45	NA	.20
Edible weight	NA	2.22	NA	1.00	NA	1.01	NA	.45
Packaged, including fresh shucked oysters, clams, shrimp, and others	NA	1.00	NA	1.00	NA	.45	NA	.45
Fish, cured, all types, including smoked, pickled, salted, and dried:								
Reported weight (cured weight)	1.50	1.00	NA	.75	.68	.45	NA	.34
Edible weight	2.00	1.33	NA	1.00	.91	.60	NA	.45

NA = Not available.

[1]Factors are for specified groups and are not applicable to individual species.

[2]Weight of the fish as removed from the water.

[3]Production as reported to the National Marine Fisheries Service; imports as reported by the Bureau of the Census, U.S. Dept. of Commerce.

[4]Weight of fin fish after removal of entrails, head, tail, and fins.

[5]Weight of the edible portion of the fish or shellfish.

Table 25—Shellfish: Net weight per gallon and liter

Product	Net weight		
	Pounds per gallon	*Kilograms per gallon*	*Kilograms per liter*
Clams	8.75	3.97	1.048
Oysters	8.75	3.97	1.048
Scallops	8.75	3.97	1.048

Table 26—Canned fish and shellfish: Net weight per standard case

Product	Net weight	
	Pounds per case	*Kilograms per case*
Alewife	45.00	20.41
Anchovies	31.25	14.18
Mackerel	45.00	20.41
Salmon	48.00	21.77
Sardines:		
Maine	23.40	10.61
Pacific	45.00	20.41
Shad	45.00	20.41
Tuna and tuna-like fish:		
Solid	21.00	9.53
Chunks	19.50	8.85
Flakes and grated	18.00	8.16
Crab meat, natural	19.50	8.85
Shrimp, wet pack[1]	6.75	3.06
Clam products:		
Whole and minced[1]	15.00	6.80
Juices, chowders, broth, and other	30.00	13.61
Oysters, natural[1]	7.00	3.18
All other	48.00	21.77

[1]Cut out or drained weights of canned contents. All others are net canned contents.

Table 27—Factors relating to corn content of specified products[1]

Product	Factors for converting—					
	One bushel of corn to—		Pounds of product to bushels of corn	Kilograms of product to bushels of corn	Weight of—	
	Pounds of product	Kilograms of product			Corn to weight of product	Product to weight of corn
Corn, shelled[2]	56.00	25.40	0.018	0.008	1.000	1.00
Corn meal, degermed	31.60	14.33	.032	.014	.564	1.77
Corn meal, nondegermed, regular	50.00	22.68	.020	.009	.893	1.12
Corn flour	33.00	14.97	.030	.014	.589	1.70
Corn grits or hominy grits	29.00	13.15	.035	.016	.518	1.93
Hominy:						
Canned	145.00	65.77	.007	.003	2.589	.39
Dry	27.30	12.38	.037	.017	.488	2.05
Cornstarch, 10% moisture[3]	34.40	15.60	.029	.013	.614	1.63
Cornstarch, pearl, 12% moisture or laundry starch[3]	35.20	15.97	.028	.013	.629	1.59
Corn sugar:						
Dextrose, hydrate, 8% moisture	30.00	13.61	.033	.015	.536	1.87
Dextrose, anhydrous, moisture free[4]	27.50	12.47	.036	.017	.491	2.04
Corn syrup, 43° Baume,[5] 19.73% moisture, 42% dextrose equivalent[3]	37.60	17.06	.027	.012	.672	1.49
High fructose corn syrup	39.2	17.79	.027	.012	.700	1.43
Corn flakes or corn cereal	21.50	9.75	.047	.021	.384	2.60
Corn-soya cereal[6]	33.60	15.24	.030	.013	.600	1.66
Precooked infant-type mixed cereal	500.00	226.80	.002	.001	8.929	.11
Premixed cereal	101.80	46.18	.010	.004	1.818	.55
Pancake mix	330.00	149.69	.003	.001	5.882	.17
Pudding powder, 33% cornstarch	103.80	47.08	.010	.004	1.854	.54
Chocolate pudding powder, 18% cornstarch	186.60	84.64	.005	.002	3.333	.30
Corn snacks	67.50	30.62	.015	.007	.830	.12
Corn oil:						
Refined	1.60	.73	.625	.284	.029	35.00
Crude	1.80	.82	.556	.252	.032	31.10
Corn feeds, gluten feed, gluten meal, and corn oil meal or cake[7]	14.90	6.76	.067	.030	.266	3.76
Hominy feed	20.00	9.07	.050	.023	.357	2.80

[1]All factors are based on 56 pounds of shelled corn per bushel. Product spectrum varies with corn milled and product mix sought. Factors presented are based on maximum yield of product.

[2]Five bushels of shelled corn = 1 barrel; 10 bushels of ear corn = 1 barrel; 70 pounds of ear corn = 1 bushel of shelled corn.

[3]From 17% moisture corn.

[4]Based on continued reprocessing of uncrystallized dextrose liquors.

[5]A hydrometer scale that separately covers liquids with specific gravities greater and less than 1.

[6]Corn-soya cereal contains approximately 34% soya flour.

[7]Conversion factors cover all corn feeds combined. Data are not available to show separate components of corn feeds, though gluten feed is generally about 55-60% of total corn feeds, gluten meal around 40%, and corn oil meal only about 2%.

Table 28—Factors relating to whole grain and processed wheat

Commodity	Unit	Factors for converting— Units of wheat to pounds of commodity	Factors for converting— Units of commodity to bushels of wheat
Wheat, whole grain	Pound	1.0	0.01667
	Bushel	60.0	1.0
	Short ton	2,000.0	33.33
	Metric ton	2 204.622	36.744
	Long ton	2,240.0	37.33
White flour[1]	Pound	.740	.0225
	100-pound sack	74.00	2.252
	Bushel	44.40	—
	Short ton	1,480.00	45.04
	Metric ton	1 631.42	49.64
	Long ton	1,657.60	50.44
Semolina or farina[2]	Pound	.58	.0287
	100-pound sack	58.00	2.874
	Bushel	34.80	—
	Short ton	1,160.0	57.47
	Metric ton	1 278.7	63.35
	Long ton	1,299.2	64.37
Whole wheat flour or cracked wheat	Pound	.980	.01701
	100-pound sack	98.0	1.700
	Bushel	58.8	—
	Short ton	1,960.0	34.01
	Metric ton	2 160.5	37.49
	Long ton	2,195.2	38.09
Wheat meal or whole wheat meal	Pound	.990	.01684
	100-pound sack	99.0	1.684
	Bushel	59.4	—
	Short ton	1,980.0	33.67
	Metric ton	2 182.6	37.12
	Long ton	2,217.6	37.71

— = Not applicable.

[1]74% extraction based on wheat purchased with a final flour moisture of 14%.

[2]At a 73% extraction rate, semolina and farina comprise approximately 58% and flour 15%.

Table 29—Factors relating to barley and malt content of specified products

Product	Factors for converting—				
	Bushels of barley to pounds of product	Pounds of product to bushels of barley	Metric tons of—		
			Barley to metric tons of product	Product to metric tons tons of barley	Product to metric tons of malt
Barley, unprocessed	48	0.02083	1.000	1.000	1.412
Barley flour	26	.03846	.542	1.845	—
Pearl barley	30	.03333	.625	1.600	—
Malt	34	.02941	.708	1.412	1.000
Malt syrups and malt extract	26	.2846	.542	1.845	.764

— = Not applicable.

Table 30—Factors relating to oat content of specified products

Product	Factors for converting—			
	Bushels of oats to pounds of product	Pounds of product to bushels of oats	Metric tons of—	
			Oats to metric tons of product	Product to metric tons of oats
32-pound bushel:[1]				
Oats, unprocessed	32.0	0.03125	1.000	1.000
Oat flour	20.3	.04926	.634	1.577
Oatmeal—				
Quick cooking	18.5	.05405	.579	1.730
Regular	18.5	.05405	.579	1.730
Ready-to-eat cereal	20.5	.04878	.641	1.560
38-pound bushel:[1]				
Oats, unprocessed	38.0	.02632	1.000	1.000
Oat flour	24.1	.04149	.634	1.577
Oatmeal—				
Quick cooking	22.0	.04545	.579	1.730
Regular	22.0	.04545	.579	1.730
Ready-to-eat cereal	24.3	.04115	.641	1.560

[1]A 32-pound bushel is the standard test weight for oats and has been unchanged for many years. However, premiums and discounts are routinely paid above and below 38 pounds per bushel.

Table 31—Soybean products: Factors relating to yields of selected items

Product	Factors for obtaining—				
	Units of product from unit of soybeans	Equivalent units of soybeans from unit of product	Pounds of product from bushel of soybeans	Equivalent bushels of soybeans from pound of product	Pounds of product from short ton of soybeans
Soybean oil, crude[1]	0.185	5.41	11.1	0.090	369
Soybean oil, refined[1]	.178	5.61	10.7	.094	357
Soybean cake or meal, 44-percent protein[1]	.793	1.26	47.6	.021	1,587
Soybean hulls[2]	.070	14.29	4.2	.238	140
Flour, flakes, or grits:					
Full fat	.908	1.10	54.5	.018	1,817
Low fat	.733	1.36	44.0	.023	1,467

[1]1985-89 crop-year average.
[2]Removed when 50-percent protein meal produced.

Table 32—U.S. oilseeds: Average yield per harvested acre[1]

Oil-bearing material	Average yield		Crude oil produced	Cake and meal produced
	Bushels[2]	*Tons*	*Pounds*	
Cottonseed	—	0.502	1,004	166	472
Flaxseed	12.7	—	711	249	455
Peanuts (farmers' stock)	—	1.213	2,426	752	1,030
Safflowers	—	.738	1,476	561	856
Soybeans	33.2	—	1,992	369	1,584
Sunflowers (oil type)	—	.595	1,190	482	595

[1]Yields of oilseeds are 5-year averages, 1985-89. Yields of oil and cake or meal are based on the 5-year average yields of oilseeds converted to oil and cake or meal equivalents on the basis of 5-year, 1985-89, crop year average percentage outturns, as follows:

Oil outturn: Cottonseed, 16.5%; flaxseed (linseed oil), 35.8%; peanuts, 31.0%; safflowers, 38.0%; soybeans, 18.5%; and sunflowers, 40.5%.

Cake or meal outturns: Cottonseed, 46.0%; linseed, 65.0%; peanuts, 42.5%; safflowers, 58.0%; soybeans, 79.5%; and sunflowers, 50.0%.

[2]Bushel weight: Flaxseed, 56 pounds; soybeans, 60 pounds.

Table 33—Flaxseed products: Factors relating to yields of selected items

Product	Factors for obtaining—				
	Units of product from unit of flaxseed	Equivalent units of flaxseed per unit of product	Pounds of product from bushel of flaxseed	Equivalent bushels of flaxseed per pound of product	Pounds of product from short ton of flaxseed
Linseed oil, crude[1]	0.357	2.80	20.0	0.0500	714
Linseed oil, refined[2]	.293	3.41	16.4	.0610	586
Linseed cake or meal[1]	.654	1.53	36.6	.0273	1,307

[1]1985-89 crop-year average. [2]Linseed oil is typically refined from raw oil, rather than crude. The loss in refining is about 8 percent from raw to refined and bleached.

Table 34—Vegetable oils and products: Conversion factors relating to crude and refined oils and to pounds and gallons

Oil and product	Factors for converting—			
	Refined oil from crude oil	Equivalent crude oil from refined oil	Pounds from gallons	Gallons from pounds
Oil:				
Castor	[1]	[1]	8.0	0.125
Coconut	0.97	1.03	7.5	.133
Corn	.90	1.11	7.7	.130
Cottonseed	.90	1.11	7.7	.130
Fish (menhaden)	[1]	[1]	7.7	.130
Grain screenings	[1]	[1]	7.7	.130
Linseed	.92	1.07	7.7	.130
Murumuru	[1]	[1]	7.5	.133
Mustardseed	[1]	[1]	7.7	.130
Oiticica	[1]	[1]	7.8	.128
Olive	[1]	[1]	7.6	.132
Ouricuri	[1]	[1]	7.5	.133
Palm	.97	1.03	7.7	.130
Palm kernel	.97	1.03	7.5	.133
Peanut	.92	1.09	7.7	.130
Perilla	[1]	[1]	7.7	.130
Rapeseed	.96[2]	[1]	7.7	.130
Safflower	[1]	[1]	7.7	.130
Sesame seed	[1]	[1]	7.7	.130
Soybean	.92	1.09	7.7	.130
Sunflower seed	.92	1.09	7.7	.130
Tucum	[1]	[1]	7.5	.133
Tung	[1]	[1]	7.8	.128
Product:				
Cooking and salad oils	[1]	[1]	7.4	.135
French dressing	[1]	[1]	8.7	.115
Mayonnaise	[1]	[1]	8.0	.125
Oil and vinegar dressing	[1]	[1]	8.4	.119
Salad dressing	[1]	[1]	8.7	.115
Sandwich spread	[1]	[1]	8.7	.115

[1]Not customarily reported as refined oil. [2]From "super degummed" to refined, bleached, and deodorized.

Table 35—Fat content and major fatty acid composition of selected foods

Food	Total fat	Fatty acids[1]		
		Saturated[2]	Monounsaturated	Polyunsaturated
		Percent		
Salad and cooking oils:				
Safflower	100	9	12	75
Sunflower, oil type, northern	100	10	20	66
Corn	100	13	24	59
Cottonseed	100	26	18	52
Soybean[3]	100	14	23	58
Sesame	100	14	40	42
Soybean, specially processed	100	15	43	38
Peanut	100	17	46	32
Palm	100	49	37	9
Olive	100	14	74	8
Coconut	100	87	6	2
Vegetable fats-shortening	100	25	45	26
Table spreads:				
Margarine, first ingredient on label—[4]				
Safflower oil (liquid), tub	80	9	23	45
Corn oil (liquid), tub	80	14	32	31
Soybean oil (liquid), tub	80	14	37	27
Corn oil (liquid), stick	80	13	46	18
Soybean oil (liquid), stick	80	17	39	21
Cottonseed or soybean oil partially hydrogenated, tub	80	14	38	25
Butter	81	51	23	3
Animal fats:				
Poultry	100	30	45	21
Lard (pork)	100	39	45	11
Beef, lamb	100	48	41	5
Fish, raw:				
Salmon, pink	3	1	1	1
Tuna, bluefin	5	1	1	2
Mackerel, Pacific and jack	8	2	2	2
Herring, Atlantic	9	2	4	2
Nuts:				
Walnuts, English	62	6	14	39
Walnuts, black	57	4	13	38
Brazil	66	16	23	24
Peanuts, peanut butter	50	7	24	15
Pecans	68	5	42	17
Egg yolk	31	10	12	4
Avocado, California	17	3	11	2

[1]These percentages do not add to 100% because other fat-like substances are included in the total composition.
[2]Includes fatty acids with chains from 4-24 carbon atoms.
[3]Suitable as salad oil.
[4]Mean values of selected samples may vary with brand name and date of manufacture.

Source: U.S. Dept. Agr., Human Nutrition Information Service, Agricultural Handbook Nos. 8-1, *Dairy and Egg Products*, 1976; 8-9 *Fruits and Fruit Juices*, 1982; 8-12 *Nuts and Seed Products*, 1984; 8-15 *Finfish and Shellfish Products*, 1988 and 1989 Supplement to Agricultural Handbook No. 8, 1990.

Table 36—Fruit, vegetable, and juice containers: Dimensions, capacities, and conversion factors

Industry designation	Dimensions[1]	Total capacity avoirdupois ounces of water at 68°F	Total capacity grams of water at 20°C	Factor to multiply by to convert to—		
				No. 303 equivalent	No. 2 equivalent	No. 2½ equivalent
		Ounces	*Grams*			
6Z	202 x 308	6.00	186.62	0.36	0.30	0.20
8Z short	211 x 300	7.90	245.71	.47	.39	.27
8Z tall	211 x 304	8.65	269.04	.51	.42	.29
No. 1 flat	307 x 203	8.89	276.51	.53	.43	.30
No. 1 picnic	211 x 400	10.90	339.02	.65	.53	.37
No. 211 cylinder	211 x 414	13.55	421.45	.80	.66	.46
No. 2 vacuum (12-ounce vacuum)	307 x 306	14.70	457.21	.87	.72	.49
No. 300	300 x 407	15.20	472.77	.90	.74	.51
No. 1 tall	301 x 411	16.60	516.31	.99	.81	.56
No. 303	303 x 406	16.85	524.09	1.00	.82	.57
No. 300 cylinder	300 x 509	19.40	603.40	1.15	.95	.65
No. 2	307 x 409	20.50	637.61	1.22	1.00	.69
No. 303 cylinder	303 x 509	21.85	679.60	1.30	1.07	.73
No. 3 vacuum	404 x 307	23.85	741.81	1.42	1.16	.80
Jumbo	307 x 510	25.70	799.35	1.53	1.26	.87
No. 2 cylinder	307 x 512	26.35	819.56	1.56	1.28	.89
No. 2½	401 x 411	29.75	925.31	1.77	1.45	1.00
29Z	307 x 700	32.50	1 010.85	1.93	1.58	1.09
32Z (quart)	307 x 710	35.50	1 104.16	2.10	1.73	1.19
No. 3 cylinder (46 ounces)	404 x 700	51.70	1 608.03	3.06	2.52	1.74
No. 5 squat	603 x 408	68.15	2 119.67	4.03	3.32	2.29
No. 10	603 x 700	109.45	3 404.22	6.48	5.34	3.67

[1]The first figures represent the diameter of the container and the second figures represent the height. The first digit represents inches and the second two digits represent sixteenths of an inch; that is, 307 is 3-7/16 inches.

Source: National Canners Association.

Table 37—Canned fruits and vegetables: Case conversion factors by container designation

Container designation	Containers per case	24/303's	Factor to multiply by to convert to—	
			23/2's	24/2½
	Number			
6Z	48	0.72	0.59	0.41
8Z short	72	1.41	1.16	.80
8Z tall	24	.52	.42	.29
No. 1 flat	48	1.05	.87	.60
No. 1 picnic	48	1.30	1.06	.73
No. 211 cylinder	24	.80	.66	.46
No. 2 vacuum (12-ounce vacuum)	24	.87	.72	.49
No. 300	24	.90	.74	.51
No. 1 tall	24	.99	.81	.56
No. 303	24	1.00	.82	.57
No. 300 cylinder	24	1.15	.94	.65
No. 2	24	1.22	1.00	.69
No. 3 vacuum	24	1.42	1.16	.80
No. 2½	24	1.77	1.45	1.00
29Z	12	.96	.79	.55
32Z (quart)	12	1.05	.86	.60
No. 3 cylinder	12	1.53	1.26	.87
No. 5 squat	6	1.01	.83	.57
No. 10	6	1.62	1.33	.92

Source: National Canners Association.

Table 38—Canned fruits: Factors relating to farm and processed weights

Commodity	Farm weight		Pounds canned from pounds farm weight	Cases canned per metric ton farm weight[1]			Cases of 24/2½'s from pounds canned	Net weight per case 24/2½'s
	Canned	Case No. 24 2.5 pounds		24/2½'s	24/303's	6/10's		
	Pounds			*Cases*				*Pounds*
Citrus fruit:								
Citrus salad	2.10	91.32	0.48	19.86	35.19	21.59	0.02	43.50
Grapefruit sections	2.02	87.72	.50	20.68	36.55	22.49	.02	43.50
Orange sections	2.22	96.62	.45	18.77	33.20	20.41	.02	43.50
Other fruit:								39.00
Apples	1.86	72.46	.54	25.03	44.08	27.21	.03	
Applesauce	1.25	53.90	.80	33.65	59.50	36.73	.02	43.50
Apricots	.69	31.25	1.44	58.05	102.76	63.40	.02	45.00
Berries:								
Blackberries	.65	28.09	1.55	64.58	113.38	70.29	.02	43.50
Blueberries	.84	36.36	1.20	49.89	88.34	54.51	.02	43.50
Boysenberries	.69	29.24	1.44	62.04	108.84	67.48	.02	43.50
Gooseberries	.60	25.06	1.68	72.38	126.98	78.73	.02	43.50
Loganberries	.65	29.24	1.53	62.04	108.84	67.48	.02	43.50
Raspberries	.64	26.99	1.56	67.21	117.91	73.10	.02	43.50
Strawberries	.73	30.49	1.38	59.50	104.31	64.67	.02	43.50
Cherries:								
Red tart-pitted	1.06	45.87	.95	39.55	69.66	42.99	.02	43.50
Sweet-pitted	1.02	44.44	.98	40.82	72.20	44.44	.02	43.50
Sweet-unpitted	.71	30.77	1.41	58.96	104.31	64.22	.02	43.50
Cranberries	.39	16.31	2.58	111.20	195.01[2]	120.90	.02	48.00
Figs	.65	29.41	1.53	61.68	109.20	67.21	.02	45.00
Fruit cocktail	.89	40.00	1.13	45.35	80.27	49.43	.02	45.00
Fruits for salad	.89	40.00	1.13	45.35	80.27	49.43	.02	45.00
Olives[3]	.95	25.51	1.06	71.11	125.71	77.46	.04	27.00
Peaches:								
Clingstone	.84	36.36	1.20	49.89	88.34	54.51	.02	43.50
Freestone	1.02	44.44	.98	40.82	72.20	44.44	.02	43.50
Pears	1.00	43.48	1.00	41.72	73.83	45.44	.02	43.50
Pineapple	1.71	76.92	.59	23.58	41.72	25.67	.02	45.00
Plums, fresh	.66	29.85	1.51	60.77	107.57	66.21	.02	45.00

Note: Relationships between farm and processed weights for most commodities vary widely from season to season and between localities. Factors shown in this table represent average relationships for all producing areas.

[1]Basic figure is 24/2's for citrus, 24/303's for applesauce and berries, 6/10's for apple slices and red tart cherries, 24/300's for cranberries, and 24/2½'s for other products.

[2]Basis 24 cases of No. 300's.

[3]Drained weight.

Table 39—Canned fruits and juices: Net weight per case[1]

Item	Liquid contents	48, 8-ounce		24 No. 303		12 No. 3 cylinders	
		Pounds	*Kilograms*	*Pounds*	*Kilograms*	*Pounds*	*Kilograms*
Canned fruits:							
Citrus—							
Grapefruit and orange sections	Syrup	24	10.9	24.0	10.9	37.5	17.0
Grapefruit sections	Water	24	10.9	NA	NA	NA	NA

	Type pack	24, 8-ounce tall		24 No. 303		24 No. 2.5		6 No. 10	
		Pounds	*Kilo-grams*	*Pounds*	*Kilo-grams*	*Pounds*	*Kilo-grams*	*Pounds*	*Kilo-grams*
Noncitrus—									
Apples	Specific gravity 0.95	NA	NA	24.0	10.9	NA	NA	40.5	18.3
	Water	NA	NA	NA	NA	NA	NA	37.5	17.0
Apple butter		NA	NA	NA	NA	NA	NA	46.5	21.1
Applesauce	Specific gravity 1.07	NA	NA	24.0	10.9	43.5	19.7	40.5	18.4
Apricots	Heavy syrup	13.1	5.9	24.0	10.9	45.0	20.4	40.5	18.4
	Light syrup	12.8	5.8	24.0	10.9	43.5	19.7	39.8	18.1
Blackberries	Heavy syrup	12.8	5.8	24.0	10.9	NA	NA	39.8	18.1
	Light syrup	12.8	5.8	24.0	10.9	NA	NA	39.4	17.9
Cherries—	Water	12.0	5.4	24.0	10.9	NA	NA	38.6	17.5
Unpitted	Heavy syrup	13.1	5.9	24.0	10.9	45.0	20.4	40.5	18.4
	Light syrup	12.8	5.8	24.0	10.9	43.5	19.7	39.8	18.1
Pitted	Heavy syrup	13.1	5.9	24.0	10.9	43.5	19.7	40.5	18.4
	Water	12.0	5.4	24.0	10.9	42.0	19.1	38.6	17.5
Cranberry sauce	42% solids	NA	NA	24.0	10.9	NA	NA	43.9	19.9
Figs	Heavy syrup	13.1	5.9	25.5	11.6	45.0	20.4	41.3	18.7
Fruit cocktail	Extra heavy syrup	13.1	5.9	25.5	11.6	45.0	20.4	41.3	18.7
	Heavy syrup	13.1	5.9	24.0	10.9	45.0	20.4	40.5	18.4
Fruit for salad	Extra heavy syrup	13.1	5.9	25.5	11.6	45.0	20.4	41.3	18.7
	Heavy syrup	13.1	5.9	24.0	10.9	45.0	20.4	40.5	18.4
Grapes	Extra heavy syrup	12.4	5.6	24.0	10.9	45.0	20.4	41.3	18.7
	Heavy syrup	12.4	5.6	24.0	10.9	NA	NA	NA	NA
Peaches	Heavy syrup	13.1	5.9	24.0	10.9	43.5	19.7	40.5	18.4
	Light syrup	12.8	5.8	24.0	10.9	43.5	19.7	39.8	18.1
Pears	Heavy syrup	12.8	5.8	24.0	10.9	43.5	19.7	39.8	18.1
	Light syrup	12.8	5.8	24.0	10.9	43.5	19.7	39.4	17.9
Pineapple	Heavy syrup	NA	NA	NA	NA	44.3	20.1	40.5	18.4
	Water	NA	NA	NA	NA	NA	NA	39.8	18.1
Plums	Heavy syrup	13.2	6.0	24.0	10.9	45.0	20.4	NA	NA
	Light syrup	12.8	5.8	24.0	10.9	43.5	19.7	39.8	18.1
Prunes, stewed	Extra heavy syrup	NA	NA	NA	NA	45.0	20.4	41.3	18.7
	Heavy syrup	NA	NA	NA	NA	NA	NA	40.5	18.4

See footnote at end of table.

Continued—

Table 39—Canned fruits and juices: Net weight per case[1]—Continued

Item	48, 6.5-ounce		24 No. 2		12 No. 3 cylinders		24 No. 2.5	
	Pounds	*Kilograms*	*Pounds*	*Kilograms*	*Pounds*	*Kilograms*	*Pounds*	*Kilograms*
Canned juices:								
Citrus—								
Blended citrus	19.5	8.8	29.6	13.4	37.3	16.9	8.7	3.9
Grapefruit	19.5	8.8	29.6	13.4	37.3	16.9	8.7	3.9
Lemon and lime	NA	NA	29.2	13.2	36.8	16.7	8.6	3.9
Orange	19.5	8.8	29.6	13.4	37.3	16.9	8.7	3.9
Tangerine	19.5	8.8	29.6	13.4	37.3	16.9	8.7	3.9

	24 No. 2		12/32Z glass		12/40Z glass		Gallon	
	Pounds	*Kilograms*	*Pounds*	*Kilograms*	*Pounds*	*Kilograms*	*Pounds*	*Kilograms*
Noncitrus—								
Apple	29.9	13.6	26.2	11.9	32.8	14.9	8.8	4.0
Grape	30.6	13.9	26.5	12.0	33.0	15.0	9.0	4.1
Nectar	29.9	13.6	26.0	11.8	32.5	14.7	8.8	4.0
Pineapple	29.9	13.6	26.2	11.9	32.8	14.9	8.8	4.0
Prune (18.5° Brix)[2]	NA	NA	26.7	12.1	33.4	15.1	NA	NA

NA = Not available.

[1]Weights are derived from *Net Contents Statements for Canned Food Labels*, 1977, National Canners Association.

[2]A hydrometer scale for measuring the sugar content of a solution at a given temperature.

Table 40—Fruit juices and concentrates: Factors relating to farm and processed weights[1]

Fruit and specification	Approximate Brix[2]	Equivalent farm weight per—		Gallons per unit of farm weight		Processed weight	
		Gallon	Liter				
	Degrees	*Pounds*	*Kilograms*	*Box[3]*	*Ton*	*Pounds per gallon*	*Kilograms per liter*
Apple:							
Single-strength juice	13	12.0	20.6	NA	170	8.8	15.11
Frozen 3-to-1 concentrate	45	47.0	80.7	NA	43	10.0	17.17
Citrus fruits:[4]							
Orange—							
Single-strength juice	12	16.0	27.5	5.5	122	8.7	14.94
Frozen concentrate	45	69.0	118.5	1.3	29	10.0	17.17
Grapefruit—							
Single-strength juice	10	18.0	30.9	4.7	110	8.7	14.94
Frozen concentrate	40	83.0	142.5	1.0	24	9.8	16.83
Lemon—							
Single-strength juice	5	26.0	44.6	2.9	76	NA	NA
Nonfrozen concentrate	5	112.0	192.3	.7	17.9	NA	NA
Concentrate for lemonade	5	18.0	30.9	4.2	110	NA	NA
Grape:							
Single-strength juice	16	11.0	18.9	NA	175	8.9	15.28
Frozen concentrate	50	40.0	68.7	NA	50	10.3	17.68
Pineapple:							
Single-strength juice	14	15.0	25.8	NA	133	8.8	15.11
4-to-1 concentrate	61	75.0	128.8	NA	27	10.8	18.54
3-to-1 concentrate	50	60.0	103.0	NA	33	10.3	17.68
Prune (from fresh prunes):							
Single-strength juice	31	13.0	22.3	NA	155	9.4	16.14
1.5-to-1 concentrate	73	32.0	54.9	NA	62	11.4	19.57

NA = Not available.

[1]For additional information on concentration of fruit juices, see U.S. Dept. Agr., Agricultural Research Service, *Calculations of Volume and Weight Reduction in the Concentration of Fruit Juices*, ARS 74-7, June 1956.

[2]A hydrometer scale for measuring the sugar content of a solution at a given temperature.

[3]Oranges, 90 pounds (41 kilograms); grapefruit, 85 pounds (39 kilograms); and lemons, 76 pounds (34 kilograms).

[4]Orange and grapefruit products based on Florida yields; lemons on California yields.

[5]Lemon product yields are based on a standard ton containing 36.5 pounds of anhydrous citric acid.

Table 41—Dehydrated and dried fruits: Relationship between farm and processed weights

Commodity	Factors for converting to—		
	Farm weight from natural condition weight	Farm weight from packed processed weight	Packed processed weight from natural condition weight
Apples	8.00	8.00	1.00
Apricots	6.00	5.56	1.08
Dates:[1]			
Whole	1.00	1.00	1.00
Pitted	NA	1.14	.88
Figs	3.00	2.94	1.02
Peaches:			
Cling	7.50	6.94	1.08
Freestone—			
Elberta	7.00	6.48	1.08
Other	6.00	5.55	1.08
Pears	6.50	6.31	1.03
Prunes:[2]			
California	2.90	2.60	1.04
Pacific Northwest	3.14	3.05	1.03
Raisins:			
Thompson, sultana[3]	4.30	4.62	.93
Golden seedless	4.30	4.53	.95
Muscat, seeded	4.00	5.00	.80

NA = Not available.

[1]Includes only farm sales of dates for human consumption after farm cullage. Average farm sales of cull dates directly into nonfood channels estimated at 14% of U.S. production.

[2]To convert canned dried prunes to dried prunes, multiply by 0.691085.

[3]Includes unseeded muscats.

Table 42—Fruits, dehydrated (low moisture): Relationship between farm and processed weights

Fruit and specifications	Packaged weight of dehydrated product				Units of fresh product to make a unit of dehydrated product	
	No. 10 can		Gallon can			
	Pounds	*Kilograms*	*Pounds*	*Kilograms*	*Pounds*	*Kilograms*
Apples:					NA	NA
Wedges	2.0	0.9	NA	NA	NA	NA
Slices	2.0	.9	NA	NA	NA	NA
Diced	2.4	1.1	NA	NA	10.0	4.5
Nuggets	2.5	1.1	NA	NA	NA	NA
Powder	NA	NA	5	2.3	NA	NA
Apricots:						
Slices	2.75	1.2	NA	NA	NA	NA
Diced	3.5	1.6	NA	NA	NA	NA
Nuggets	3.5	1.6	NA	NA	7.1	3.2
Powder	NA	NA	6	2.7	NA	NA
Cherries, sour-pitted	.7	.3	NA	NA	7.0	3.2
Dates:						
Nuggets	3.5	1.6	NA	NA	NA	NA
Powder	3.5	1.6	6	2.7	1.75[1]	.8
Figs:						
Slices	3.0	1.4	NA	NA	NA	NA
Powder	NA	NA	6	2.7	1.35[1]	.6
Peaches:						
Slices	2.0	.9	NA	NA	NA	NA
Diced	3.0	1.4	NA	NA	NA	NA
Nuggets	3.0	1.4	NA	NA	7.0- 8.0	3.2-3.6
Powder	NA	NA	6	2.7		
Pears, slices	1.5	.7	NA	NA	11.0-12.0	5.0-5.4
Prunes:						
Whole pitted	3.0	1.4	NA	NA	NA	NA
Nuggets	3.0	1.4	NA	NA	1.71[1]	.8
Powder	NA	NA	6	2.7		
Strawberries, freeze-dried	.7	.3	NA	NA	11.0-14.0	5.0-6.4

NA = Not available.
[1]From commercially dried fruit.

Table 43—Frozen fruits and vegetables: Estimated average relationship between farm and processed weights

Commodity	Percentage recovery	Factors for converting to—		Approximate fruit-to-sugar ratio[2]
		Farm weight from frozen weight	Frozen weight from farm weight[1]	
	Percent			
Frozen fruits:				
Apples	60	1.67	0.60	0 or 7 to 1
Apricots	78	1.10	.91	6 or 8 to 1
Berries—				
Blackberries	95	1.05	.95	0
Blueberries	97	1.03	.97	0
Boysenberries	88	1.14	.88	0
Gooseberries	97	1.03	.97	0
Loganberries	88	1.14	.88	0
Raspberries	95	1.05	.95	0
Strawberries	93	.89	1.12	5 or 4 to 1
Cherries, sour	75	1.11	.90	5 to 1
Cherries, sweet	85	1.18	.85	0
Grapes	85	1.18	.85	0
Peaches	67	1.25	.80	5 to 1
Pineapples	50	1.60	.625	4 to 1
Prunes	85	1.18	.85	0
Frozen vegetables:				
Asparagus	52	1.92	.52	2
Broccoli	75	1.33	.75	2
Brussels sprouts	75	1.33	.75	2
Carrots	55	1.82	.55	2
Cauliflower	70	1.43	.70	2
Corn, cut	27	3.70	.27	2
Lima beans[3]	95	1.05	.95	2
Okra	85	1.18	.85	2
Other greens	75	1.33	.75	2
Peas, green[3]	92	1.09	.92	2
Peas, southern	50	2.00	.50	2
Peppers, sweet	70	1.43	.70	2
Potatoes, white	40	2.50	.40	2
Snap beans	85	1.18	.85	2
Spinach	70	1.43	.70	2
Squash	55	1.82	.55	2
Sweetpotatoes	50	2.00	.50	2

[1]Frozen weight is weight of frozen fruit plus sugar content. Where more than one fruit-to-sugar ratio is shown, the first is used in this computation.

[2]Fruit-to-sugar ratio does not apply to vegetables.

[3]Shelled.

Table 44—Fruits and vegetables: Relationship between weights of freeze-dried and frozen products[1]

Frozen food	Moisture content	Freeze-dried weight as percentage of frozen weight	Factors to convert freeze-dried weight to frozen weight
		Percent	
Apples, uncooked, sliced, sweetened	73.3	0.27	3.7
Apricots, uncooked	85.4	.15	6.7
Blueberries, uncooked, unsweetened	85.0	.15	6.5
Broccoli, cooked or uncooked	90.6	.96	10.4
Brussels sprouts, cooked or uncooked	89.3	.11	9.2
Cauliflower, cooked or uncooked	92.9	.72	13.9
Green peas, cooked	81.7	.19	5.4
Green peppers, cooked	94.7	.54	18.5
Mushrooms, uncooked, whole, pieces or sliced	90.4	.98	10.2
Pears, uncooked pieces or sliced	82.7	.18	5.7
Pineapples, uncooked slices or chunks, sweetened	77.1	.23	4.3
Plums, Italian, uncooked pieces or sliced	78.7	.22	4.6
Raspberries, red, uncooked	74.3	.26	3.8
Snap beans, cooked	91.6	.86	11.6
Strawberries, whole, uncooked	75.5	.25	4.0

[1]Freeze-dried products contain 2% moisture.

Table 45—Canned vegetables: Factors relating to farm and processed weights

Commodity	Pounds farm weight		Pounds canned from pounds farm weight	Cases canned per ton farm weight[1]			Cases 24/303's from pounds canned	Net weight per case 24/303's
	From pounds canned	From case No. 24/303's		24/303's	24 2½'s	6/10's		
	Pounds			*Cases*				*Pounds*
Asparagus	1.220	28.57	.819	70	39.5	43.2	0.043	23.4
Beets	1.290	31.75	.755	63	35.6	38.9	.041	24.6
Carrots	1.333	32.79	.750	61	34.5	37.7	.041	24.6
Corn:								
Cream style	2.033	50.00	.492	40	22.6	24.7	.041	24.6
Whole grain	2.538	62.50	.394	32	18.1	19.8	.041	24.6
Lima beans[2]	.625	15.38	1.599	130	73.4	80.2	.041	24.6
Mushrooms	1.403	34.48	.713	58	32.8	35.8	.041	24.6
Okra	1.030	24.10	.971	83	46.9	51.2	.043	23.4
Peas[2]	.739	18.18	1.353	110	62.1	67.9	.041	24.6
Pickles	.744	17.86	1.344	112	63.8	69.4	.042	30.0
Pimentos	2.410	57.14	.415	35	19.8	21.6	.042	23.7
Potatoes, white	1.572	37.74	.636	53	29.9	28.7	.042	24.0
Pumpkin and squash	2.710	66.67	.369	30	16.9	18.5	.041	24.6
Sauerkraut	1.859	43.48	.538	46	26.0	28.4	.043	23.4
Snap beans	.712	16.67	1.404	120	67.8	74.1	.043	23.4
Spinach	.901	20.00	1.110	100	56.5	61.7	.045	22.2
Sweetpotatoes	1.292	30.77	.784	65	36.7	40.1	.042	23.8
Tomatoes	1.553	36.36	.644	55	31.1	34.0	.043	23.4
Tomato catsup[3]	2.457	66.67	.407	30	17.1	18.6	.037	27.1
Tomato juice	1.527	36.36	.655	55	31.1	34.0	.042	23.8
Tomato paste[3]	5.432	142.86	.184	14	8.0	8.7	.038	26.3
Tomato puree[4]	3.247	80.00	.308	25	14.2	15.5	.041	24.6

[1]Basic figure is yield of 24/303's per ton. One case 24/303's is equivalent to 0.57 cases 24/2½'s and 0.62 cases 6/10's.
[2]Shelled basis.
[3]33% solids.
[4]11% solids.

Table 46—Vegetables, dehydrated: Relationship between farm and processed weights and weight of product per 5-gallon container

Commodity	Moisture content		Average losses[1]	Factors for converting to—[2]		Product	Weight of product per 5-gallon container	
	Average for raw material	Dehydrated product		Processed weight from farm weight	Equivalent farm weight from processed			
	Percent						*Pounds*	*Kilograms*
Asparagus	92	4	55	0	27.0	Dice	8	3.6
						Powder	17	7.7
Beans, green	89	4	30	0.08	12.5	½-inch cut	7	3.2
Beets without tops	87	4	10	.12	8.2	Powder	30	13.6
Cabbage	92	4	30	.05	21.0	Dice	9	4.1
						Powder	30	13.6
Carrots	86	4	35	.10	10.5	Dice	10-20	4.5-9.1
						Powder	35	15.9
Celery:								
Stalk and leaf flakes	93	35	10	.07	15.4	Flakes	3-6	1.4-2.7
Stalk slice	94	3.5	25	.05	21.2	Slice	6	2.7
Garlic	71	5	15	.26	4.0	Sliced	15	6.8
						Powder	30	13.6
Greens	92	4	20-50	.04-.07	15-25	Flakes	8	3.6
						Powder	18	8.2
Horseradish	70	5	20	.025	4.0	Powder	20	9.1
Leek	88	4	27	.091	11.0	Powder	22	10.0
Okra	90	5	13	.091	11.0	Powder	22	10.0
Onion	88	4	11	.11	9.0	Flakes	10-15	4.5-6.8
						Powder	25	11.3
Onions, green tops	90	4	20	.083	12.0	Flakes	6	2.7
						Minced	8	3.6
Parsley	89	4	15	.10	10.3	Flakes	4	1.8
						Powder	20	9.1
Peas, green	78	4	10	.20	5.0	Powder	18	8.2
Peppers:								
Green bell	93	3.5	40	.05	20.4	Dice	8	3.6
						Powder	20	9.1
Red bell	90	5.5	38	.06	15.6	Dice	10	4.5
						Powder	25	11.3
Pimento	89	4	65	.04	25.0	Powder	25	11.3
Potatoes	80	6	40	.125	8.0	Dice	17	7.7
	78	6	33	.14-.17	5.9-7.1	Granules	36	16.3
	80	4.5	33	.14-.17	5.9-7.1	Flakes	10	4.5
Pumpkin	91	5	13	.083	12.0	Powder	25	11.3
Spinach	90	4	10	.094	10.6	Powder	18	8.2
Sweetpotato flakes	69	3	23.5	.143	7.0	—	—	—
Turnips	91	5	33	.063	16.0	Dice	14	6.4
						Powder	25	11.3
Tomato flakes	93	4	20	.058	17.0	Flakes	12	5.4

— = Not applicable.

[1]Includes fines and defects removed during the final inspection of dried product and other process losses.

[2]Successful dehydration of many of these vegetables depends upon the ability to divert undesirable sizes and/or grades to other kinds of processing. If such outlets are not available, shrinkage ratios will be greater than shown.

Table 47—Dehydrofrozen fruits and vegetables: Relationship between moisture content of product and weight reduction

Percentage original moisture content	Percentage moisture content in product at percentage weight reduction of—			
	50	60	70	80
		Percent		
95	90	87.5	83.3	75
90	80	75.0	66.7	50
85	70	62.5	50.0	25
80	60	50.0	33.3	0
75	50	37.5	16.7	—
70	40	25.0	0	—
65	30	12.5	—	—
60	20	0	—	—
55	10	—	—	—
50	0	—	—	—

— = Not applicable.

Table 48—Dehydrofrozen fruits and vegetables: Relationship between prepared material and product

Commodity	Units of prepared material to produce pound dehydrofrozen product[1]	
	Pounds	*Kilograms*
Apples	2	0.91
Carrots	2	.91
Cherries	2-2.5	.9-1.1
Green peas	2	.91
Pimentos	3	1.36
Potatoes:		
Piece form	2	.91
Mashed	4	1.81

[1]After peeling, trimming, and cutting. Preparation losses should be the same as for freezing.

Table 49—Fruit and vegetable juice powders: Factors relating to farm and processed weights

Commodity	Approximate percentage solids content of juice	Yield of juice as a percentage of raw material	Factors for converting to— Processed weight from farm weight	Factors for converting to— Equivalent farm weight from processed weight
	Percent			
Apple	12	75	0.092	11
Citrus:				
Grapefruit	11	49	.055	18
Lemon	9	40	.037	27
Orange	13	55	.072	14
Grape	17	75	.130	8
Pineapple[1]	15	58	.089	11
Prune	32	74	.250	4
Tomato	6.4	70	.045	22

[1]Assuming juice is only product. In practice, however, juice is made only from edible grade peels, cores, trimmings, and sortouts.

Table 50—Potatoes: Estimated conversion factors for selected products

Products	Farm weight	Finished product	Farm weight	Finished product	Recovery	To obtain farm weight equivalent, multiply product weight by—
	Pounds		*Kilograms*		*Percent*	*Number*
Chips	100	33.3[1]	45.4	15.1	33.3[1]	3.0
Frozen	100	50.0	45.4	22.7	50.0	2.0
Starch:						
Idaho	100	12.5	45.4	5.7	12.5	8.00
Maine	100	9.3	45.4	4.2	9.3	10.75
Average	100	11.1	45.4	5.0	11.1	9.00

Note: In commercial potato-peeling plants, preparation loss, including waste and shrinkage, ranged from 5% to 48%, averaging approximately 25%.

[1]From potatoes with 1.075 specific gravity.

Table 51—Tree nuts: Relationship between shelled and in-shell, and between farm and retail weights

Commodity	Factors for converting to—			
	Shelled weight from in-shell weight	In-shell equivalent from shelled weight	Retail weight from orchard-run[1]	Orchard-run equivalent from retail weight[1]
Almonds:				
Domestic[2]	0.60	1.67	0.95	1.05
Imported	.30	3.33	NA	NA
Brazil nuts	.50	2.00	NA	NA
Cashews	.22	4.55	NA	NA
Chestnuts	.84	1.19	NA	NA
Filberts:				
Domestic	.40	2.50	.95	1.05
Imported	.45	2.22	NA	NA
Macadamias (Hawaii)	.38	2.63	NA	NA
Pecans:				
Domestic—				
Improved	.50	2.00	.91	1.10
Seedling	.38	2.63	.91	1.10
Imported	.50	2.00	NA	NA
Pistachios	.43	2.33	.33	1.67
Walnuts, English:				
Domestic[3]	.40	2.50	.87	1.15
Imported	.42	2.38	NA	NA
Walnuts, black	.17	5.88	NA	NA

NA = Not available.

[1]Orchard-run weight before culling. Both orchard-run and retail weight are in-shell basis.

[2]Average for domestic crop in recent years. The following illustrate the variation among various varieties: Nonpareil, Merced, and Thompson 0.60; mission 0.40; Peerless 0.35. Peerless is frequently marketed in-shell.

[3]Average for portion of crop shelled commercially. Equivalent shelled and in-shell ratio for graded walnuts sold in-shell is 0.45, and average for entire U.S. walnut crop is 0.40.

Table 52—Yield of product per unit of coffee or tea[1]

Commodity	Yield of product
Coffee (green or decaffeinated)	0.84 units roasted coffee, or .4 units instant soluble
Tea (dry leaf basis)	.4 units instant soluble

[1]A standard 60-kilogram bag of green coffee equals 132.276 pounds.

Table 53—Raw sugar content per pound of specified sugar products

Product	Sugar in specified units of product[1]			
	Raw	Refined	Raw	Refined
	--------Pounds--------		*-------Kilograms-------*	
Brown sugar	0.963	0.90	0.437	0.408
Invert sugar	.856	.80	.388	.363
Lump sugar	1.070	1.00	.485	.454
Powdered sugar[2]	1.038	.97	.471	.440
Sugar, granulated	1.070	1.00	.485	.454
Invert syrup:				
High invert	.740	.69	.336	.313
Medium invert	.790	.74	.358	.336
Sucrose syrup	.690	.64	.313	.290

[1]Raw value is 96° polar sugar.
[2]Powdered sugar contains about 3% cornstarch to prevent lumping.

Table 54—Sugar content of canned fruits

Canned product	Natural fruit sugar	Added refined cane and beet sugar[1]		
		Weight in 24 No. 2½ cans		Sugar content
	Percent	*Pounds*	*Kilograms*	*Percent*
Apricots	14.4	2.97	1.35	6.6
Cherries (sweet)	13.9	2.75	1.25	6.1
Figs	19.0	.90	.41	2.0
Fruit cocktail	11.0	3.15	1.43	7.0
Fruit for salad	9.9	3.52	1.60	8.1
Peaches	11.8	3.13	1.42	7.2
Pears	11.6	2.78	1.26	6.4
Plums	14.8	2.79	1.27	6.2

[1]Based on the finished canned product packed in heavy syrup.

Table 55—Refined beet and cane sugar in confectionery products

Product	Share of refined sugar in product	Product	Share of refined sugar in product
	Percent		*Percent*
Confections:[1]		Confections:[1]—Continued	
Candy—		Chocolate coated candies—	
Uncoated candies—		Marshmallows	45
Caramels	30-45	Nougats	45
Creams, candy corn, crystallized creams, and other	70	Peanuts and nut meats	40
Grained mint types, and other so-called pure sugar	90	Bars, uncoated—	
Fudges	40-45	Nougats, taffy, caramels, jelly, and other	40
Hard candies such as fruit drops, Christmas candies, and other	50-75	Peanut brittle	30-67
Jellies, soft, sugar-sanded	45	Solid chocolate, stars, and other—	
Jellies, jube jel	35	Bittersweet chocolate	40
Lozenges, sugar wafers, and pressed tablets	90	Sweet chocolate	50
Marshmallows	45	Milk chocolate	55
Marshmallows, grain, circus peanuts, and other	57	Coated bars chocolate or confectioners coatings—	
Nougats	40	Caramel-nougat	45
Taffy, English-type	50	Coconut	40
Taffy, wrapped	25	Creamed	65
Sugar-panned candies—		Fudge	52
Jelly beans and related products	60	Marshmallows	52
Caramels	60	Nougats	48
Chocolate centers	65	Peanut brittle	50
Creams	70	Peanut or nut roll bar	35
Fudges	75	Novelty chocolate bars—	
Hard candies such as cinnamon drops	70	Almond	40
Marshmallows	80	Cereal	40
Peanut and nut meats	50	Peanut	40
Chocolate coated candies—		Miscellaneous candy—	
Brittles, nut or peanut	50	Chocolate	38
Caramels	35	Nonchocolate	52
Creams, assorted	60	Unspecified	45
Fruits such as cordial cherries	60	Chewing gum	56
Fudges	52	Chocolate, sweetened cooking	50
Jellies	25-50	Cocoa, beverage powder (military)	52
		Fruit peel, candied	70
		Popcorn, candied	60

[1]The sugar content of confections may vary as much as 10% from the indicated figures.

Table 56—Refined beet and cane sugar content of specified products

Product	Unit	Weight of refined sugar per unit of product	
		Pounds	*Kilograms*
Dairy products:			
Chocolate milk	Pound	0.05-0.07	0.02-0.03
Condensed milk, sweetened	Pound	.42	.19
	48, 14-ounce cans	17.64	8.00
Condensed skim milk, sweetened	Pound	.40	.18
Ice cream	Pound	.15	.07
	Gallon (4.7 pounds)	.70	.32
Ice cream mix:			
Paste	Pound	.36	.16
Powder	do.	.40	.18
Sherbet	do.	.28	.13
Water ice	do.	.29	.13
Dessert powders:			
Custard or starch pudding powder	do.	.61	.28
Gelatin-base powders	do.	.85	.39
Fountain syrups and soft drinks:			
Beverage powders, synthetic lemon or orange[1]	—	—	—
Butterscotch or marshmallow topping	Pound	.40	.18
	Gallon (11 pounds)	4.40	2.00
	6 No. 10 cans	19.80	8.98
Chocolate syrup for topping	Pound	.26	.12
	Gallon (11 pounds)	2.86	1.30
	6 No. 10 cans	12.87	5.84
Chocolate syrup for beverages	Pound	.38	.17
	Gallon (10.27 pounds)	3.90	1.77
	6 No. 10 cans	17.55	7.96
Cola, clear fruit or other soft drink syrups	Pound	.55	.25
	Gallon (10.5 pounds)	5.80	2.63
Cola-type soft drinks, bottled	Pound	.10	.05
	Gallon (8.65 pounds)	.866	.39
	24, 7-ounce bottles	1.14	.52
	24, 12-ounce bottles	1.95	.88
Fruit flavored soft drinks	Pound	.12	.05
	Gallon (8.7 pounds)	1.05	.48
	24, 7-ounce bottles	1.37	.62
	24, 12-ounce bottles	2.36	1.07
Ginger ale, bottled	Pound	.084	.04
	Gallon (8.6 pounds)	.722	.33
	24, 12-ounce bottles	1.62	.73
Fruit products:			
Fruit, frozen	Pound	.20	.09
Fruit products, other—			
Apple butter	do.	.29	.13
Jellies, jams, and preserves	do.	.55	.25
Marmalade	do.	.67	.30
Mincemeat	do.	.35	.16
Miscellaneous:			
Mayonnaise	do.	.10	.05
	Gallon	.81	.37
Pickles, sweet	Pound	.35	.16
Salad dressing	do.	.24	.11
	Gallon	2.11	.96

— = Not applicable. [1]Synthetic beverage powders are sweetened with corn syrup and dextrose.

Table 57—Net weights, sugar solids content, and total solids content per unit of specified products at 20° Celsius[1]

Product	Unit[2]	Net weight per unit	Total sugar solids content[3]	Total solid content
Corn syrup, regular 42° Baume	Pound	1.00	.78	0.78
	Kilogram	.45	.35	.36
	No. 10 can	8.88	6.92	6.95
	Gallon	11.68	9.11	9.15
	Liter	44.21	34.48	34.63
Corn sugar or dextrose (hydrate)	Pound	1.00	.92	.92
	Kilogram	.45	.42	.42
Honey	Pound	1.00	.78	.83
	Kilogram	.45	.35	.38
	Gallon	11.84	9.24	9.83
	Liter	44.81	34.97	37.21
Maple syrup	Pound	1.00	.64	.66
	Kilogram	.45	.29	.30
	Gallon	11.03	7.06	7.28
	Liter	41.75	26.72	27.55
Maple syrup, imitation:				
Thin type	Pound	1.00	.66	.66
	Kilogram	.45	.30	.30
	Gallon	11.03	7.28	7.28
	Liter	41.75	27.55	27.55
Thick type	Pound	1.00	.73	.73
	Kilogram	.45	.33	.33
	Gallon	11.39	8.31	8.31
	Liter	43.11	31.45	31.45
Maple sugar	Pound	1.00	.87	.90
	Kilogram	.45	.39	.41
Molasses, edible, first centrifugal:[4]				
U.S. grade A	Pound	1.00	.635	.79
	Kilogram	.45	.29	.36
	No. 10 can	8.91	5.66	7.04
	Gallon	11.72	7.44	9.26
	Liter	44.36	28.16	35.05
U.S. grade B	Pound	1.00	.615	79
	Kilogram	.45	.28	35.83
	No. 10 can	8.91	5.48	7.04
	Gallon	11.72	7.21	9.26
	Liter	44.36	27.29	35.05

See footnotes at end of table.

Continued—

Table 57—Net weights, sugar solids content, and total solids content per unit of specified products at 20° Celsius[1]—Continued

Product	Unit[2]	Net weight per unit	Total sugar solids content[3]	Total solid content
Molasses, edible, first centrifugal:[4]—Continued				
U.S. grade C	Pound	1.00	0.58	0.79
	Kilogram	.45	.26	.36
	No. 10 can	8.91	5.17	7.04
	Gallon	11.72	6.80	9.26
	Liter	44.36	25.74	35.05
Molasses, inedible blackstrap[5 6]	Pound	1.00	.50	.795
	Kilogram	.45	.23	.36
	Gallon	11.74	5.87	9.33
	Liter	44.44	22.22	35.31
	Tank car	93,920	46,960	74,666
Refiner's syrup:[7]				
U.S. grade A	Pound	1.00	.66	.72
	Kilogram	.45	.30	.33
	Gallon	11.34	7.51	8.16
	Liter	42.92	28.43	30.89
U.S. grade B	Pound	1.00	.62	.72
	Kilogram	.45	.28	.33
	Gallon	11.34	7.02	8.16
	Liter	42.92	26.57	30.89
U.S. grade C	Pound	1.00	.59	.76
	Kilogram	.45	.27	.34
	Gallon	11.55	6.85	8.78
	Liter	43.72	25.93	33.23
U.S. grade D	Pound	1.00	.53	.76
	Kilogram	.45	.24	.34
	Gallon	11.55	6.14	8.78
	Liter	43.72	23.24	33.23
Sugar cane syrup:				
U.S. grade B, unsulfured	Pound	1.00	.68	.74
	Kilogram	.45	.31	.34
	No. 10 can	8.70	5.92	6.44
	Gallon	11.45	7.79	8.47
	Liter	43.34	29.49	32.06
U.S. grade B, sulfured	Pound	1.00	.65	.74
	Kilogram	.45	.29	.34
	No. 10 can	8.70	5.66	6.44
	Gallon	11.45	7.44	8.47
	Liter	43.34	28.16	32.06

See footnotes at end of table.

Continued—

Table 57—Net weights, sugar solids content, and total solids content per unit of specified products at 20° Celsius[1]—Continued

Product	Unit[2]	Net weight per unit	Total sugar solids content[3]	Total solid content
Sorgo syrup	Pound	1.00	0.68	0.76
	Kilogram	.45	.31	.34
	No. 10 can	8.78	5.97	6.67
	Gallon	11.55	7.85	8.78
	Liter	43.72	29.71	33.23

[1]A temperature scale that registers the freezing point of water at 0°C and boiling point of 100°C. To convert °F to °C, subtract 32 and multiply by 5/9; to convert °C to °F multiply by 9/5 and add 32.

[2]The No. 10 can is estimated to contain 0.76 gallon, based on internal volume of 189.7 cubic inches and 93% full when cold.

[3]Total sugar solids refers to all sugars, not only sucrose. The sugar content of all products, except corn syrup and honey, consists of one or more of the following sugars: dextrose, levulose (monosaccharides), and sucrose (disaccharide). Corn syrup, regular, 42° Baume contains 34% of mono, di, tri saccharides, which types of sugars are generally associated with sweetness. These types include dextrose and maltose (disaccharide). In addition, corn syrup contains 44% higher sugars (polymers of dextrose) which have little or no sweetness. Baume is a hydrometer scale that separately covers liquids with specific gravities greater and less than 1. The sugar content of honey averages 38% levulose, 31% dextrose, 7% maltose, 1.5% sucrose, and 1.5% higher sugars.

[4]U.S. grade A is based on minimum total sugar content of 63.5% and minimum density of 79° Brix. U.S. grade B is based on a minimum total sugar percentage of 61.5% and minimum density of 79° Brix. U.S. grade C is based on a minimum total sugar content of 58.0% and minimum density of 79° Brix. Brix is a hydrometer scale for measuring the sugar content of a solution at a given temperature.

[5]Based on average total sugar content of 50% and minimum density of 79.5° Brix.

[6]One gallon of ethanol made from 2.4 gallons of inedible blackstrap molasses.

[7]U.S. grade A is based on Brix solids content of not less than 72% and a ratio of total sugars to Brix solids of not less than 92%. U.S. grade B is based on a Brix solids content of not less than 72% and a ratio of total sugars to Brix solids of not less than 86%. U.S. grade C is based on Brix content of not less than 76% and a ratio of total sugar to Brix solids of not less than 78%. U.S. grade D is based on a Brix content of not less than 76% and a ratio of total sugars to Brix solids of not less than 70%. For a definition of Brix, see footnote 4.

Table 58—Factors for converting cotton acreages, cotton, and cotton products to equivalents[1]

From	To obtain	Multiply by
Acreage:		
Planted	Acreage harvested	0.926
	Cottonseed produced, tons	.472
	Cottonseed crushed, tons	.296
	Cotton produced, 480-pound bales	1.208
	Cotton produced, pounds	580.018
Harvested	Acreage harvested	1.080
	Cottonseed produced, tons	.510
	Cottonseed crushed, tons	.319
	Cotton produced, 480-pound bales	1.305
	Cotton produced, pounds	626.395
Cottonseed produced:		
Tons	Cottonseed crushed, tons	.627
	Linters, tons	.089
Pounds	Seed cotton, pounds	1.647
Cottonseed crushed:		
Tons	Linters, tons	.090
	Cottonseed crude oil produced, tons	.167
	Cottonseed meal produced, tons	.457
Cottonseed produced:		
480-pound bales	Cottonseed produced, tons	.391
	Cottonseed crushed, tons	.245
	Cottonseed crude oil produced, tons	.041
	Cottonseed meal produced, tons	.112
	Linters, tons	.035
Pounds	Cottonseed produced, pounds	1.629
	Cottonseed crushed, pounds	1.020
	Cottonseed crude oil produced, pounds	.171
	Cottonseed meal produced, pounds	.466
	Linters, pounds	.146
	Seed cotton, pounds[2]	3.432
Cotton:		
480-pound bales	Running bales	.973
Running bales	480-pound bales	1.028
Seed cotton:		
Pounds	Cotton produced, pounds[2]	.382
	Cottonseed produced, pounds[2]	.618

[1]All figures based on the 5-year average, 1985/86-1989/90.

[2]Cotton production plus cottonseed production. Cottonseed for planting: The 1971/72-1975/76 5-year average quantity of cottonseed used for planting 1 acre of cotton was 27.4 pounds per acre. One pound per acre equals 1.120 85 kilograms per hectare. One kilogram per hectare equals 0.89218 pounds per acre.

Table 59—Factors relating to cottonseed products[1]

Product	Factors for converting cottonseed products to—	
	Tons per ton	Pounds per ton
Crude oil	0.167	334
Cake and meal	.457	914
Hulls	.254	508
Linters	.089	178
Waste	.033	66

[1]All figures based on the 5-year average 1985/86-1989/90.

Table 60—Special notes on cotton, cottonseed, and cottonseed products

Basis of Computation. Factors have been computed on the basis of the 5 crop seasons from 1985/86 through 1989/90 and represent ratios of the 5-season averages. The 5-season average was used to bring the factors more nearly into conformity with current experience.

Use of Factors. Users of these factors are cautioned with respect to the following limitations: The factors are not "official," even though they are based upon latest available official figures. They are not permanently fixed at the stated values because later information and changes in relationships may require revisions. Because basic data underlying certain series have differing variabilities, application of the factors will not necessarily result in the most satisfactory figure for use in current work. Factors should be applied to U.S. totals only and not to State or area totals. These factors apply to full-season totals only.

Definitions

Seed cotton	Cotton as harvested but before ginning. It is the raw product which has been harvested and contains the lint, seed, and foreign matter.
Moduled seed cotton	A mechanical module builder compresses cotton into large modules in the field after harvest so that cotton may be held temporarily on the farm or at the gin while awaiting ginning. About 40% of the U.S. cotton is moduled. This practice is especially important in the Southwest and West.
Lint	Cotton that has been separated from the seed by the ginning process.
Bale	A rectangular package of compressed cotton lint as it comes from the gin. Including the bagging and ties, it weighs about 500 pounds and its dimensions vary depending upon the degree of compression that may range from 12 to 32 pounds per cubic foot. A bale is the form of package by which cotton moves in domestic and foreign commerce. However, cotton is bought and sold on a net weight (pound or kilogram) basis.
Running bale	Any bale of varying lint weight as it comes from the gin.
480-pound net weight bale	An average bale weight used to maintain statistical comparability. It has superseded the formerly used term, 500-pound gross weight bale.
Universal density bale	A bale pressed to a uniform size or repressed in a warehouse compress one time to a density of at least 28 pounds per cubic foot.
Tare	Weight of the ties (or bands) and bagging materials which contain the bale. The weight of these packaging materials varies and is excluded from the reported or sale weight of the lint. The bands can be steel straps or wire. The bagging material can be jute, woven polypropylene fiber, or polyethylene plastic film, or cotton (woven or warp knit) depending on the type of bale packaged.
Oilseed	The cottonseed that is crushed for the oil and meal.
Planting seed	The cottonseed that is planted. Seed not planted is crushed in oil mills for the oil, meal, hulls, etc.
Linters	Short fibers (usually less than 1/8 inch long) that remain attached to the cottonseed after ginning. They are separated from the seed at the oil mill and used in cushioning product, as stuffing, or as a source of cellulose for a variety of chemical products.
Motes	Cotton waste material from the cotton ginning process, primarily resulting from the lint cleaning operation. Motes can be reclaimed and sold for use in padding and upholstery filling, nonwovens, and some open-end yarns.

Table 61—Scoured yield of greasy shorn and pulled domestic wools

Grade	Domestic production of greasy wool[1]	Scoured yield[1]	
		Shorn	Pulled
		Percent	
Fine; 64's and finer	28.9	27.0	NA
½ blood; 60's and 62's	28.7	50.0	67.0
⅜ blood; 56's and 58's	24.6	51.0	72.0
¼ blood; 50's and 54's	13.5	56.0	81.0
Low ¼ blood; 46's and 48's	4.3	61.0	82.0
Common and braid; 36's, 40's, and 44's		62.0	84.0
Weighted average, all grades	100.0	52.8	72.9

NA = Not available.

[1]Based on Current Industrial Report: "Stocks of Wool and Related Fibers," U.S. Dept. of Commerce, Bureau of the Census, MA-22M, 1971-86 reports. Percentage of production by grade based on the stocks reports and wool supply and use data for 1991, provided by the American Sheep Industry Association.

Table 62—Tobacco: Factors for adjusting stocks reported by dealers and manufacturers to a farm-sales-weight equivalent

Type	Type number	Factors to multiply by to convert— Stemmed stocks to— Unstemmed equivalent	Stemmed stocks to— Farm-sales-weight equivalent	Unstemmed stocks to farm-sales-weight equivalent from packed weight
Auction market areas (types 11-37):[1]				
Flue-cured	11-14	1.295	1.470	1.12
Virginia fire-cured	21	1.299	1.598	1.23
Tennessee and Kentucky fire-cured	22-23	1.324	1.471[2]	1.04
Burley	31	1.345	1.550	1.12
Southern Maryland	32	1.373	1.400	1.02
One sucker	35	1.413	1.554	1.10
Green River	36	1.389	1.570	1.13
Virginia sun-cured	37	1.326	1.538	1.16
Miscellaneous domestic	72-73	1.333	1.493	1.12
Imported leaf (types 81-93):				
Cigar leaf	81-89	1.400	1.624	1.16
Oriental and aromatic	91	1.333	1.466	1.10
Flue-cured	92	1.295	1.450	1.12
Burley	93	1.345	1.506	1.12

		Factors to multiply by to convert— Stemmed stocks to— Unstemmed equivalent	Farm-sales-weight equivalent	Unstemmed stocks to farm-sales-equivalent from packed weight Sweated weight[3]	Marked weight[3]	Farm-sale weight[3]
Domestic-grown cigar leaf (types 41-62):						
Pennsylvania seedleaf	41	1.444	1.718	1.19	1.05	1.00
Ohio	42-44	1.454	1.730	1.19	1.05	1.00
Puerto Rican	46	1.314	1.551	1.18	1.16	1.00
Connecticut broadleaf	51	1.375	1.622	1.18	1.04	1.00
Connecticut Havana seed	52	1.386	1.635	1.18	1.04	1.00
Southern Wisconsin	54	1.383	1.687	1.22	1.06	1.00
Northern Wisconsin	55	1.404	1.713	1.22	1.06	1.00
Connecticut shade	61	1.245	1.419	1.14	1.10	1.00
Georgia and Florida shade	62	1.235	1.408	1.14	1.10	1.00

[1]Types 11-37 are reported on the basis of packed weight.

[2]Farm-sales-weight equivalent based on sweated weight factor.

[3]The instructions for reporting unstemmed cigar-leaf of the domestic types require that dealers and manufacturers indicate the weight basis on which the tobacco is reported, namely, farm-sales-weight, marked weight, or sweated weight. The stocks are converted to the farm-sales weight equivalent on the basis of average factors reflecting the percentage reported each quarter in each of these categories.

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